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Registration No. 333-177719

PROSPECTUS SUPPLEMENT TO PROSPECTUS DATED NOVEMBER 21, 2011

OncoGenex Pharmaceuticals, Inc.

4,165,000 Shares of Common Stock

We are offering 4,165,000 shares of our common stock.

Our common stock is listed on The NASDAQ Capital Market under the symbol "OGXI." On March 15, 2012, the last reported sale price of our common stock on The NASDAQ Capital Market was $17.43 per share.

INVESTING IN OUR SECURITIES INVOLVES A HIGH DEGREE OF RISK. SEE "RISK FACTORS" BEGINNING ON PAGE S-8 OF THIS PROSPECTUS SUPPLEMENT. YOU SHOULD READ THIS PROSPECTUS SUPPLEMENT, THE ACCOMPANYING PROSPECTUS, AND THE DOCUMENTS INCORPORATED BY REFERENCE INTO THIS PROSPECTUS SUPPLEMENT AND THE ACCOMPANYING PROSPECTUS CAREFULLY BEFORE YOU MAKE YOUR INVESTMENT DECISION.

	Per Share	Total
Public offering price	$ 12.00	$49,980,000
Underwriting discounts and commissions	$ 0.72	$ 2,998,800
Proceeds, before expenses, to us	$ 11.28	$46,981,200

We have granted a 30-day option to the underwriters to purchase up to 624,750 additional shares of our common stock at the public offering price, less the underwriting discounts and commissions.

Delivery of the securities offered hereby is expected to be made on or about March 21, 2012.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

Joint Book-Running Managers

Leerink Swann **Stifel Nicolaus Weisel**

Co-Managers

Lazard Capital Markets **William Blair & Company**

The date of this prospectus supplement is March 16, 2012

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Prospectus Supplement

Accompanying Prospectus

You should rely only on the information contained in, or incorporated by reference into, this prospectus supplement and contained in, or incorporated by reference into, the accompanying prospectus or any free writing prospectus, as modified and superseded pursuant to Rule 412 under the Securities Act of 1933, as amended, or the Securities Act. We have not, and the underwriters have not, authorized anyone to provide you with different information. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus supplement and the accompanying prospectus. You should not rely on any unauthorized information or representation. This prospectus supplement is an offer to sell only the securities being offered hereby and only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus supplement, the accompanying prospectus and any free writing prospectus is accurate only as of the date on the front of the applicable document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus supplement, the accompanying prospectus or any free writing prospectus, or any sale of a security.

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part, including the documents incorporated herein by reference, is the prospectus supplement, which describes the specific terms of this offering. The second part, including the documents incorporated therein by reference, is the accompanying prospectus, which provides more general information. Generally, when we refer to "this prospectus," we are referring to both parts of this document combined. We urge you to carefully read this prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus, before buying any of the securities being offered under this prospectus supplement. This prospectus supplement may add, update or change information contained in the accompanying prospectus. If the information varies between this prospectus supplement and the accompanying prospectus, you should rely on the information contained in this prospectus supplement; provided that if any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in the accompanying prospectus—the statement in the document having the later date modifies or supersedes the earlier statement in accordance with Rule 412 under the Securities Act.

Market data and industry statistics used throughout this prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus are based on independent industry publications, reports by market research firms and other published independent sources. Although we believe these sources are credible, we have not independently verified the data or information obtained from these sources. Accordingly, investors should not place undue reliance on this information. By including such market data and information, we do not undertake a duty to update or provide that data in the future.

When used in this prospectus supplement and the accompanying prospectus, the terms "OncoGenex," "we," "our" and "us" refer to OncoGenex Pharmaceuticals, Inc., a Delaware corporation, and its subsidiary, unless otherwise specified or unless the context requires otherwise.

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus include trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus supplement, the accompanying prospectus or any related free writing prospectus are the property of their respective owners.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus contain "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. These forward-looking statements involve a number of risks and uncertainties. We caution readers that any forward-looking statement is not a guarantee of future performance and that actual results could differ materially from those contained in the forward-looking statement. These statements are based on current expectations of future events. Such statements include, but are not limited to, statements about future financial and operating results, plans, objectives, expectations and intentions, costs and expenses, interest rates, outcome of contingencies, financial condition, results of operations, liquidity, business strategies, cost savings, objectives of management and other statements that are not historical facts. You can find many of these statements by looking for words like "believes," "expects," "anticipates," "estimates," "may," "should," "will," "could," "plan," "intend," or similar expressions in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. We intend that such forward-looking statements

be subject to the safe harbors created thereby. Examples of these forward-looking statements include, but are not limited to:

- progress and preliminary and future results of clinical trials conducted by us or our collaborators;
- anticipated regulatory filings, requirements and future clinical trials conducted by us or our collaborators;
- our anticipated future capital requirements and the terms of any capital financing agreements;
- timing and amount of future contractual payments, product revenue and operating expenses;
- market acceptance of our products and the estimated potential size of these markets; and
- our anticipated future capital requirements and the terms of any capital financing agreements.

These forward-looking statements are based on the current beliefs and expectations of our management and are subject to significant risks and uncertainties. If underlying assumptions prove inaccurate or unknown risks or uncertainties materialize, actual results may differ materially from current expectations and projections. The following factors, among others, could cause actual results to differ from those set forth in the forward-looking statements:

- our limited operating history;
- uncertainty relating to the timing, feasibility and results of clinical trials;
- dependence on Teva's ongoing commitment and ability to develop and commercialize custirsen;
- dependence on the development and commercialization of our product candidates, particularly on custirsen;
- the risk that research or previous clinical trial results may not be indicative of results in humans or in future studies;
- the possibility that our competitors may develop and market more effective or less expensive products;
- the reliance on third parties to conduct our clinical trials;
- the reliance on third parties to manufacture and supply our product candidates;
- changes in the treatment landscape, general competitive conditions within the drug development and pharmaceutical industry and new developments or therapies that may not work in combination with our product candidates;
- uncertainties regarding the safety and effectiveness of our products and technologies;
- future capital requirements and uncertainty of obtaining additional funding through debt or equity financings on terms acceptable to us;
- acceptance of our products by the medical community;
- our ability to build out our product candidate pipeline through product in-licensing, acquisition activities, or otherwise;
- the potential for product liability issues and related litigation;
- the possibility we will be unable to acquire or develop products or product candidates;
- our dependence on key employees and our ability to recruit additional employees;
- proper management of our operations;
- the potential inability to successfully protect and enforce our intellectual property rights;

- the reliance on third parties who license intellectual property rights to us to comply with the terms of such agreements and to enforce, prosecute and defend such intellectual property rights;
- volatility in the value of our common stock;
- impediments to a third-party acquisition of us;
- the timing, expense and uncertainty associated with the development and regulatory approval process for products;
- uncertainties regarding our future operating results, and the risk that our product candidates will not obtain the requisite regulatory approvals to commercialize or that the future sales of our product candidates may be less than expected or nil;
- the uncertainty associated with exiting or subleasing our excess office and laboratory space;
- the effect of current, pending or future legislation, regulations and legal actions in the United States, Canada and elsewhere affecting the pharmaceutical and healthcare industries; and
- general economic conditions.

You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this prospectus supplement or, in the case of the accompanying prospectus and the documents referred to or incorporated by reference, the date of those documents. You are advised to consult any additional disclosures we have made or will make in our reports to the SEC on Forms 10-K, 10-Q and 8-K.

All subsequent written or oral forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. We do not undertake any obligation to release publicly any revisions to these forward-looking statements to reflect events or circumstances after the date of this prospectus supplement or to reflect the occurrence of unanticipated events, except as may be required under applicable U.S. securities law. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward-looking statements.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights certain information about us, this offering and information appearing elsewhere in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. This summary is not complete and does not contain all of the information that you should consider before investing in our securities. You should read this entire prospectus supplement and the accompanying prospectus carefully, including the information referred to under the heading "Risk Factors" in this prospectus supplement, and the financial statements and other information incorporated by reference into this prospectus supplement and the accompanying prospectus when making an investment decision.

OncoGenex Pharmaceuticals, Inc.

We are a biopharmaceutical company committed to the development and commercialization of new cancer therapies that address treatment resistance in cancer patients. We have four product candidates in our pipeline, custirsen, OGX-427, OGX-225 and CSP-9222, each of which has a distinct mechanism of action and represents a unique opportunity for cancer drug development. Of the product candidates in our pipeline, custirsen and OGX-427 are clinical-stage assets.

Our product candidates custirsen, OGX-427 and OGX-225 focus on mechanisms of treatment resistance in cancer patients and are designed to block the production of specific proteins that we believe promote survival of tumor cells and are over-produced in response to a variety of cancer treatments. Our aim in targeting these particular proteins is to disable the tumor cell's adaptive defenses, thereby rendering the tumor cells more susceptible to attack with a variety of cancer therapies. We believe this approach will increase survival time and improve the quality of life for cancer patients. Product candidate CSP-9222 is the lead compound from a family of caspase activators that have been in-licensed from Bayer HealthCare LLC, or Bayer, and demonstrate activation of programmed cell death in pre-clinical models.

Custirsen

Custirsen is our product candidate designed to inhibit the production of clusterin, an antiapoptotic, stress-induced protein we believe promotes survival of cancer cells when overexpressed in a variety of tumors. We and collaborating investigators have conducted five phase 2 clinical trials to evaluate the ability of custirsen to enhance the effects of therapy in prostate, non-small cell lung and breast cancers. Results have been presented for each of these phase 2 trials. Data from these Phase 2 studies demonstrates the potential benefit of adding custirsen, a second-generation antisense molecule, to existing cancer therapies.

We and Teva Pharmaceutical Industries Ltd., or Teva, have entered a global collaboration and license agreement, or Collaboration Agreement, to develop and commercialize custirsen. On March 6, 2012, our wholly owned subsidiary, OncoGenex Technologies Inc., and Teva entered into an amendment to the Collaboration Agreement, or the Collaboration Agreement Amendment. Under the Collaboration Agreement Amendment, OncoGenex Technologies Inc. and Teva revised the clinical development plan, under which the following three phase 3 clinical trials have been or are expected to be initiated:

- The ongoing phase 3 clinical trial, referred to as the Synergy trial, or SYNERGY, to evaluate a survival benefit for custirsen in combination with first-line docetaxel treatment in patients with castrate resistant prostate cancer, or CRPC. During discussions with the U.S. Food and Drug Administration, or FDA, the FDA has stated to us that an application supported primarily by the results of SYNERGY alone would be acceptable for submission for market approval. We expect to enroll up to 1,000 patients in SYNERGY. Our expected timing of results for the survival primary endpoint that is based on a pre-specified number of death events is currently projected to be the fourth quarter of 2013, and we currently expect to complete patient accrual in the second half of 2012.

- A phase 3 clinical trial to evaluate a survival benefit for custirsen in combination with cabazitaxel treatment as second-line chemotherapy in patients with CRPC. We expect to enroll approximately 630 patients in this trial. Together with Teva, we plan to initiate this phase 3 clinical trial in the second half of 2012. This trial will be conducted in lieu of the phase 3 clinical trial, referred to as SATURN, which was designed to evaluate a durable pain palliation benefit for custirsen in combination with cabazitaxel or docetaxel as second-line chemotherapy in patients with CRPC.
- A phase 3 clinical trial to evaluate a survival benefit for custirsen in combination with first-line chemotherapy in patients with non-small cell lung cancer. We continue to work with Teva to finalize our development plans for custirsen in non-small cell lung cancer. As previously stated, we expect to initiate this program in the second-half of 2012.

OGX-427

OGX-427 is our product candidate that is designed to inhibit production of heat shock protein 27, or Hsp27, a cell-survival protein expressed in many types of cancers including prostate, bladder, breast and non-small cell lung cancer. Hsp27 expression is stress-induced, including by many anti-cancer therapies. For example, Hsp27 levels increased four-fold in prostate cancer patients after treatment with chemotherapy or hormone therapy. Overexpression of Hsp27 is thought to be an important factor leading to the development of treatment resistance and is associated with metastasis, negative clinical outcomes in patients with various tumor types.

We and collaborating investigators have conducted or are in the process of conducting two phase 1 and two phase 2 clinical trials to evaluate the ability of OGX-427 to enhance the effects of therapy in prostate and bladder cancers. Preliminary results have been presented for both the ongoing phase 1 and phase 2 trials and final results were presented for the completed phase 1 trial.

Our current OGX-427 development activities for prostate cancer include the following clinical trials that have been or are expected to be initiated is as follows:

- An investigator-sponsored phase 2 clinical trial evaluating OGX-427 when administered with prednisone to patients with CRPC. This randomized, controlled phase 2 trial is currently enrolling up to 72 patients who have minimally symptomatic or asymptomatic advanced prostate cancer and who have not yet received chemotherapy. We currently expect to complete patient accrual in the second half of 2012. Preliminary data have been presented.
- We intend to initiate a randomized, controlled Phase 2 study evaluating OGX-427 in combination with abiraterone acetate for the treatment of CRPC, in the second half of 2012. This trial will be supported in part by investigator grant funding.

Our current OGX-427 development activities for bladder cancer include the following clinical trials that have been initiated is as follows:

- A phase 2 clinical trial of OGX-427 in patients with metastatic bladder cancer. The trial is currently enrolling up to 180 patients. The trial design is a three-arm, randomized phase 2 in combination with gemcitabine and cisplatin in the first-line metastatic setting. Under the trial, each arm will enroll approximately 60 patients and the trial has been initiated in sites throughout the United States, Canada and Europe. We currently expect to complete patient accrual in the second half of 2013.
- An investigator-sponsored phase 1 clinical trial to evaluate OGX-427 when administered directly into the bladder in patients with bladder cancer. The trial is currently enrolling up to 36 patients and we expect to complete patient accrual in the second half of 2012. Preliminary data have been presented.

OGX-225 and CSP-9222

OGX-225 is a product candidate in pre-clinical development that is designed to inhibit production of both Insulin Growth Factor Binding Protein-2, or IGFBP-2, and Insulin Growth Factor Binding Protein-5, or IGFBP-5. Increased IGFBP-2 or IGFBP-5 production is observed in many human cancers, including prostate, non-small cell lung, breast, ovarian, bladder, pancreatic and colon, as well as acute myeloid leukemia, acute lymphoblastic leukemia, neuroblastoma, glioma and melanoma. Increased IGFBP-2 or IGFBP-5 production is linked to faster rates of cancer progression, treatment resistance and shorter survival duration in humans.

CSP-9222, which is also in pre-clinical development, is the lead compound from a family of caspase activators. These novel, small molecules have been identified as activators of programmed cell death in pre-clinical models.

Amendment of Stockholder Rights Plan

We have a stockholder rights plan that may have the effect of discouraging unsolicited takeover proposals. The stockholder rights plan is discussed in more detail under the caption "Certain Provisions of Delaware Law, the Company's Certificate of Incorporation and Bylaws and the Company's Stockholder Rights Plan" beginning on page 24 of the accompanying prospectus. In connection with this offering, we may amend the stockholder rights plan to permit certain investors to acquire beneficial ownership of 15% or more of our outstanding shares of common stock without triggering the provisions of the plan.

Corporate Information

We were organized as a California corporation in October 1991 and subsequently reorganized as a Delaware corporation in March 1995. Our principal executive offices are located at 1522 217th Place SE, Suite 100, Bothell, Washington 98021, and our telephone number is (425) 686-1500. Our website is located at http://www.oncogenex.com. Except for information specifically incorporated herein by reference, the information contained on or accessible through our website is not a part of this prospectus supplement or the accompanying prospectus.

The Offering

Common stock offered	4,165,000 shares (or 4,789,750 shares if the underwriters' option to purchase additional shares is exercised in full)
Shares of common stock to be outstanding immediately after this offering	13,914,819 shares (or 14,539,569 shares if the underwriters' option to purchase additional shares is exercised in full)
Use of proceeds	We intend to use the net proceeds from this offering to advance our proprietary product OGX-427 and potentially our pre-clinical product candidates as well as for general corporate purposes. See "Use of Proceeds" on page S-27 of this prospectus supplement.
The NASDAQ Capital Market symbol	OGXI
Risk factors	This investment involves a high degree of risk. See "Risk Factors" beginning on page S-8 of this prospectus supplement.

The number of shares of our common stock that will be outstanding immediately after this offering as shown above is based on 9,749,819 shares outstanding as of December 31, 2011. The number of shares outstanding as of December 31, 2011, as used throughout this prospectus supplement, unless otherwise indicated, excludes 766,328 shares of our common stock issuable upon the exercise of stock options outstanding as of December 31, 2011, at a weighted average exercise price of $9.82 per share, and 1,587,301 shares of common stock issuable upon the exercise of warrants outstanding as of December 31, 2011, at an exercise price of $20.00 per share.

Unless otherwise stated, all information contained in this prospectus supplement assumes no exercise by the underwriters of their option to purchase up to an additional 624,750 shares of common stock.

RISK FACTORS

An investment in our securities involves a substantial risk of loss. You should carefully consider these risk factors, together with all of the other information included or incorporated by reference in this prospectus supplement and the accompanying prospectus, as modified and superseded pursuant to Rule 412 under the Securities Act, before you decide to invest in our securities. The occurrence of any of the following risks could harm our business. In that case, the trading price of our common stock could decline, and you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our operations. You should also refer to the other information contained in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus, including our financial statements and the notes to those statements and the information set forth under the heading "Note Regarding Forward-Looking Statements."

Risks Related to this Offering

We will have broad discretion in how we use the proceeds, and we may use the proceeds in ways in which you and other stockholders may disagree.

We intend to use the net proceeds from this offering to advance our proprietary product OGX-427 and potentially our pre-clinical product candidates as well as for general corporate purposes. Our management will have broad discretion in the application of the proceeds from this offering and could spend the proceeds in ways that do not necessarily improve our operating results or enhance the value of our common stock.

Investors in this offering will suffer immediate and substantial dilution in the net tangible book value per share of our common stock.

Because the price per share of common stock in this offering is substantially higher than the net tangible book value per share of common stock, investors in this offering will suffer immediate and substantial dilution in the net tangible book value per share of common stock. Based on an offering price of $12.00 per share of common stock, if you purchase securities in this offering, you will suffer immediate and substantial dilution of approximately $6.42 per share in the net tangible book value of our common stock. See "Dilution" on page S-27 for a more detailed discussion of the dilution you will incur in connection with this offering.

The exercise of our outstanding options and warrants and the vesting of our outstanding restricted stock units will dilute stockholders and could decrease our stock price.

The exercise of our outstanding options and warrants and the vesting of our outstanding restricted stock units may adversely affect our stock price due to sales of a large number of shares or the perception that such sales could occur. These factors also could make it more difficult to raise funds through future offerings of our securities, and could adversely impact the terms under which we could obtain additional equity capital. Exercise of outstanding options and warrants, vesting of outstanding restricted stock units or any future issuance of additional shares of common stock or other equity securities, including but not limited to options, warrants, restricted stock units or other derivative securities convertible into our common stock, may result in significant dilution to our stockholders and may decrease our stock price.

Risks Related to Our Business

We have a limited operating history, have incurred losses since inception and anticipate that we will continue to incur losses for the foreseeable future. We have never had any products available for commercial sale and we may never achieve or sustain profitability.

We are a clinical-stage biopharmaceutical company with a limited operating history. We are not profitable and have incurred losses in each year since our inception. We have never had any products available for

commercial sale and we have not generated any revenue from product sales nor do we anticipate that we will generate revenue from product sales in the foreseeable future. Our only revenue to date has been collaboration revenue under our Collaboration Agreement with Teva. We have not yet submitted any products for approval by regulatory authorities and we continue to incur research and development and general and administrative expenses related to our operations. We expect to continue to incur losses for the foreseeable future, and we expect these losses to increase as we continue our research activities and conduct development of, and seek regulatory approvals for, our product candidates, and prepare for and begin to commercialize any approved products. If our product candidates fail in clinical trials or do not gain regulatory approval, or if our product candidates do not achieve market acceptance, we may never become profitable. Even if we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods.

Our clinical trials may be suspended or terminated at any time, including by the U.S. Food and Drug Administration, or FDA, other regulatory authorities, the Institutional Review Board overseeing the clinical trial at issue, by a clinical trial site or investigator, by Teva in the case of custirsen, or by us. Any failure or significant delay in completing clinical trials for our product candidates could materially harm our financial results and the commercial prospects for our product candidates.

We do not know whether any of our currently planned clinical trials for custirsen or OGX-427 will proceed or be completed on schedule, if at all, or, with respect to our other product candidates, whether we will be able to initiate any future pre-clinical studies or clinical trials, as applicable, beyond those currently planned. The completion or commencement of future pre-clinical studies or clinical trials could be substantially delayed or prevented by several factors, including:

- limited number of, and competition for, suitable patients with the particular types of cancer required for enrollment in our clinical trials;
- limited number of, and competition for, suitable sites to conduct clinical trials;
- decrease in Teva's level of focus and efforts to develop custirsen;
- introduction of new product candidates to the market in therapeutic areas similar to those that we are developing for our product candidates;
- concurrent evaluation of new investigational product candidates in therapeutic areas similar to those that we are developing for our product candidates;
- delay or failure to obtain the FDA's or non-U.S. regulatory agencies' approval or agreement to commence a clinical trial, including our phase 3 or registration clinical trials or amendment of those trials under a Special Protocol Assessment;
- delay or failure to obtain required future additional funding, when needed, through private or public offerings of our equity securities, debt financings, or the execution of a licensing, partnership or collaboration agreement with a third party for any of our product candidates;
- delay or failure to obtain sufficient manufacturing supply of custirsen;
- delay or failure to obtain sufficient supplies of any of our product candidate for our clinical trials;
- delay or failure to reach agreement on acceptable clinical trial agreement terms or clinical trial protocols with prospective sites or investigators; and
- delay or failure to obtain the approval of the Institutional Review Board to conduct a clinical trial at a prospective site.

The completion of our clinical trials currently in progress could also be substantially delayed or prevented by several factors, including:

- slower than expected rates of patient recruitment and enrollment;

- failure of patients to complete the clinical trial;
- unforeseen safety issues;
- lack of efficacy evidenced during clinical trials;
- termination of our clinical trials by one or more clinical trial sites, investigators, Institutional Review Boards, data safety monitoring boards, or FDA;
- inability or unwillingness of patients or medical investigators to follow clinical trial protocols;
- inability to monitor patients adequately during or after treatment;
- introduction of competitive products that may impede our ability to retain patients in clinical trials;
- delay or failure to obtain sufficient manufacturing supply of custirsen or OGX-427; and
- delay or failure to obtain future additional funding through private or public offerings of our equity securities, debt financings, or the execution of a licensing, partnership or collaboration agreement with a third party for any of our product candidates in the event of material unforeseen costs relating to our clinical trials currently in progress.

We depend on our collaborative relationship with Teva to further develop and commercialize custirsen, and if our relationship is not successful or is terminated, we may not be able to effectively develop and/or commercialize custirsen, which would have a material adverse effect on our business.

We depend on Teva to collaborate with us to develop and globally commercialize custirsen. Furthermore, under the Collaboration Agreement, we and Teva must agree on any changes to the clinical development plan for custirsen. As a result of our dependence on Teva, the eventual success or commercial viability of custirsen is largely beyond our control. The financial returns to us, if any, under the Collaboration Agreement depend in large part on the achievement of development and commercialization milestones, plus a share of any revenue from sales. Therefore, our success, and any associated financial returns to us and our investors, will depend in large part on Teva's performance under the Collaboration Agreement. We are subject to a number of additional specific risks associated with our dependence on our collaborative relationship with Teva, including:

- adverse decisions by Teva or the Joint Steering Committee regarding the development and commercialization of custirsen;
- possible disagreements as to the timing, nature and extent of our development plans, including clinical trials or regulatory approval strategy;
- loss of significant rights if we fail to meet our obligations under the Collaboration Agreement;
- our limited control over clinical trials of custirsen;
- changes in key management personnel at Teva, including in members of the Joint Steering Committee; and
- possible disagreements with Teva regarding the Collaboration Agreement, sharing of costs for clinical trials or ownership of proprietary rights.

If we and Teva are unable to reach an agreement under the clinical development plan, or if either we or Teva fail to perform our respective obligations or effectively manage our relationship, any clinical trial, regulatory approval or development progress could be significantly delayed or halted, could result in costly or time-consuming litigation or arbitration and could have a material adverse effect on our business.

Decisions by Teva to either reduce or eliminate its participation in the oncology field, to emphasize other competitive agents currently in its portfolio, or to add additional competitive agents to its portfolio could result in a decision to terminate the Collaboration Agreement, in which event, among other things, we may be responsible

for paying any remaining costs of all three phase 3 clinical trials. Any such termination could adversely affect the timing and extent of our development and commercialization activities, which could cause significant delays and funding shortfalls for those activities and seriously harm our business.

We are highly dependent on the success of our lead product candidate, custirsen, and we cannot give any assurance that custirsen, or any of our other product candidates, will receive regulatory approval or will be successfully commercialized.

Custirsen has been evaluated in five phase 2 clinical trials, the results of which were previously disclosed. If competitive products developed by third parties show significant benefit in the cancer indications in which we are developing our product candidates, any planned supportive or primary registration trials may be delayed, altered or not initiated and custirsen may never receive regulatory approval. In order to market custirsen, we and Teva must, among other things, conduct additional clinical trials, including phase 3 or registration clinical trials, to demonstrate safety and efficacy. We have one ongoing registration trial with custirsen in patients with CRPC. We plan to initiate a second trial in combination with cabazitaxel as second-line chemotherapy in patients with CRPC in the second half of 2012 to replace the phase 3 clinical trial, referred to as SATURN which was designed to evaluate a durable pain palliation benefit for custirsen in combination with cabazitaxel or docetaxel as second-line chemotherapy in patients with CRPC. An additional registration trial in patients with first-line non-small cell lung cancer is planned to initiate in the second half of 2012. OGX-427 has been evaluated in humans, although we have very limited safety data and have not yet established efficacy in humans. Additional clinical trials will be required for OGX-427 to establish the safety and efficacy of this product candidate. Neither OGX-225 nor CSP-9222 has been tested in humans. Our pre-clinical testing of these product candidates may not be successful and we may not be able to clinically evaluate them. Our clinical development programs for our product candidates may not receive regulatory approval either if such product candidates fail to demonstrate that they are safe and effective in clinical trials and consequently fail to obtain necessary approvals from the FDA, or similar non-U.S. regulatory agencies, or if we have inadequate financial or other resources to advance these product candidates through the clinical trial process. Any failure to obtain regulatory approval of custirsen or our other product candidates could have a material and adverse effect on our business.

Clinical trials may not demonstrate a clinical benefit of our product candidates.

Positive results from pre-clinical studies and early clinical trials, including those results from the custirsen or OGX -427 clinical trials conducted to date, should not be relied on as evidence that later-stage or large-scale clinical trials will succeed. We will be required to demonstrate with substantial evidence through well-controlled clinical trials that our product candidates are safe and effective for use in a diverse population before we can seek regulatory approvals for their commercial sale. Success in early clinical trials does not mean that future clinical trials will be successful because product candidates in later-stage clinical trials may fail to demonstrate sufficient safety and efficacy to the satisfaction of the FDA and other non-U.S. regulatory authorities despite having progressed through initial clinical trials. Further, preliminary results from our clinical trials may not be confirmed in final data, or may change materially.

Even after the completion of our planned phase 3 clinical trials, the FDA or other non-U.S. regulatory authorities may disagree with our clinical trial design and our interpretation of data, and may require us to conduct additional clinical trials to demonstrate the efficacy of our product candidates.

If our competitors develop and market products that are more effective, safer or less expensive than our future product candidates, our clinical trials and commercial opportunities will be negatively affected.

The life sciences industry is highly competitive, and we face significant competition from many pharmaceutical, biopharmaceutical and biotechnology companies that are researching and marketing products designed to address cancer indications for which we are currently developing products or for which we may develop products in the future. For example, cabazitaxel and abiraterone acetate were recently approved by the FDA for the treatment of patients with CRPC. Also, MDV3100 and alpharadin have demonstrated meaningful

improvement in Phase 3 trials. We are aware of several other companies which are developing therapeutics that seek to promote tumor cell death. Any products we may develop in the future are also likely to face competition from other drugs and therapies. Many of our competitors have significantly greater financial, manufacturing, marketing and drug development resources than we do. Large pharmaceutical companies, in particular, have extensive experience in clinical testing and in obtaining regulatory approvals for drugs. These companies also have significantly greater research and marketing capabilities than we do. In addition, many universities and private and public research institutes are, or may become, active in cancer research, which products may directly compete with ours. If our competitors market products that are more effective, safer or less expensive than our future product candidates, if any, or that reach the market sooner than our future product candidates, if any, we may not achieve commercial success.

If new therapies become broadly used, we may need to conduct clinical trials of our product candidates in combination with these new therapies to demonstrate safety and efficacy of the combination. Additional trials will delay the development of our product candidates and increase our costs. The failure of certain of our product candidates to work in combination with these new therapies would have an adverse effect on our business.

Our intention is to combine certain of our product candidates with therapies that are broadly used by clinicians and considered highly effective. As new therapies are developed, we will need to assess these therapies to determine whether to conduct clinical trials of our product candidates in combination with them to demonstrate safety and efficacy of the combination. If we determine that it is appropriate to conduct additional clinical trials of our product candidates in combination with these new therapies, the development of our product candidates will be delayed and our costs will be increased. If these clinical trials generate safety concerns or lack of efficacy, our business would be adversely affected.

If our product candidates are approved in combination with a specific therapy that is broadly used and that therapy is displaced by another product, the market for our product candidate may decrease.

Our product candidates may cause undesirable and potentially serious side effects during clinical trials that could delay or prevent their regulatory approval or commercialization.

Since patients in our clinical trials have advanced stages of cancer, we expect that additional adverse events, including serious adverse events, will occur.

Undesirable side effects caused by any of our product candidates could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in the denial of regulatory approval by the FDA or non-U.S. regulatory authorities for any or all targeted indications. This, in turn, could prevent us from commercializing our product candidates and generating revenue from their sale. In addition, if our product candidates receive marketing approval and we or others later identify undesirable side effects caused by the product:

- Teva may elect to terminate the ongoing clinical trials and cease development of custirsen;
- regulatory authorities may withdraw their approval of the product;
- we may be required to recall the product, change the way the product is administered, conduct additional clinical trials or change the labeling of the product;
- a product may become less competitive and product sales may decrease; and
- our reputation may suffer.

Any one or a combination of these events could prevent us from achieving or maintaining market acceptance of the affected product or could substantially increase the costs and expenses of commercializing the product, which in turn could delay or prevent us from generating significant revenue from the sale of the product. Recent events have raised questions about the safety of marketed drugs and may result in increased cautiousness

by the FDA in reviewing new drugs based on safety, efficacy or other regulatory considerations and may result in significant delays in obtaining regulatory approvals, additional clinical trials being required or more stringent product labeling requirements. Any delay in obtaining, or the inability to obtain, applicable regulatory approvals would prevent us from commercializing our product candidates.

We rely, in part, on third parties to conduct clinical trials for our product candidates and plan to rely on third parties to conduct future clinical trials. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may be unable to obtain regulatory approval for or commercialize our current and future product candidates.

To implement our product development strategies, we rely on third parties, such as collaborators, contract research organizations, medical institutions, clinical investigators and contract laboratories, to conduct clinical trials of our product candidates. In particular, we will have limited control over the two custirsen phase 3 trials over which Teva will have primary oversight. Although we rely on third parties to conduct our clinical trials, we are responsible for ensuring that each of our clinical trials is conducted in accordance with our investigational plan and protocol. Moreover, the FDA and non-U.S. regulatory authorities require us to comply with regulations and standards, commonly referred to as Good Clinical Practices, or GCPs, for conducting, monitoring, recording and reporting the results of clinical trials to ensure that the data and results are scientifically credible and accurate and that the clinical trial subjects are adequately informed of the potential risks of participating in clinical trials. Our reliance on third parties does not relieve us of these responsibilities and requirements. If the third parties conducting our clinical trials do not perform their contractual duties or obligations, do not meet expected deadlines or need to be replaced, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to GCPs or for any other reason, we may need to enter into new arrangements with alternative third parties and our clinical trials may be extended, delayed or terminated. In addition, a failure by such third parties to perform their obligations in compliance with GCPs may cause our clinical trials to fail to meet regulatory requirements, which may require us to repeat our clinical trials.

We rely on third parties to manufacture and supply our product candidates and other agents used in our clinical trials.

We do not own or operate manufacturing facilities, and we depend on third-party contract manufacturers for production of our product candidates and rely on other companies and their manufacturers for other agents used in our clinical trials. We lack the resources and the capability to manufacture any of our product candidates ourselves. To date, our product candidates have been manufactured in limited quantities for pre-clinical studies and clinical trials. All active pharmaceutical ingredient, or API, and drug product for custirsen and OGX-427 has been manufactured for us by third parties pursuant to a purchase order or short-term contract that has been fulfilled.

If, in the future, one of our product candidates is approved for commercial sale, we, or a pharmaceutical partner that has licensed such product candidate, will need to manufacture that product candidate in commercial quantities. We cannot provide assurance that the third-party manufacturers with which we have contracted in the past will have sufficient capacity to satisfy our future manufacturing needs, that we will be able to negotiate additional purchases of API or drug product from these or alternative manufacturers on terms favorable to us, if at all, or that a pharmaceutical partner that has licensed such product candidate will have sufficient capacity or expertise to satisfy future needs.

Third-party manufacturers may fail to perform under their contractual obligations, or may fail to deliver the required commercial quantities of bulk API or finished drug product on a timely basis and at commercially reasonable prices. We have experienced manufacturing quality issues resulting in an unusable lot of product candidate. Any performance failure on the part of our contract manufacturers could delay clinical development or regulatory approval of our product candidates or commercialization of our future product candidates, depriving us of potential product revenue and resulting in additional losses. If we are required to identify and qualify an alternate manufacturer, we may be forced to delay or suspend our clinical trials, regulatory submissions, required

approvals or commercialization of our product candidates, which may cause us to incur higher costs and could prevent us from commercializing our product candidates successfully. If we are unable to find one or more replacement manufacturers capable of production at a reasonably favorable cost, in adequate volumes, of adequate quality, and on a timely basis, we would likely be unable to meet demand for our product candidates and our clinical trials could be delayed or we could lose potential revenue. Our ability to replace an existing API manufacturer may be difficult because the number of potential manufacturers is limited to approximately five manufacturers, and the FDA must inspect any replacement manufacturer and review information related to product produced at the manufacturer before they can begin manufacturing our product candidates. It may be difficult or impossible for us to identify and engage a replacement manufacturer on acceptable terms in a timely manner, if at all. We expect to continue to depend on third-party contract manufacturers for the foreseeable future.

Our product candidates require precise, high-quality manufacturing. Any of our contract manufacturers will be subject to ongoing periodic unannounced inspection by the FDA and non-U.S. regulatory authorities to ensure strict compliance with current Good Manufacturing Practices, or cGMP, and other applicable government regulations and corresponding standards. If our contract manufacturers fail to achieve and maintain high manufacturing standards in compliance with cGMP regulations, we may experience manufacturing errors resulting in patient injury or death, product recalls or withdrawals, delays or interruptions of production or failures in product testing or delivery, delay or prevention of filing or approval of marketing applications for our product candidates, cost overruns or other problems that could seriously affect our business.

Significant manufacturing scale-up may require additional validation studies, which the FDA must review and approve. Additionally, any third-party manufacturers we retain to manufacture our product candidates on a commercial scale must pass an FDA pre-approval inspection for conformance to cGMP regulations before we can obtain approval of our product candidates. If we are unable to successfully increase the manufacturing capacity for a product candidate in conformance with cGMP regulations, the regulatory approval or commercial launch of any related products may be delayed or there may be a shortage in supply.

We also rely on third-parties for the provision of other agents used in our clinical trials, and in some circumstances these agents are provided to us at no cost. We have no assurance that these third-parties will continue to provide their products to us at no cost.

Because we depend on financing from third parties for our operations, our business may fail if such financing becomes unavailable or is not available on commercially reasonable terms.

To date, we have financed our operations primarily through the sale of our equity securities and from the upfront payment we received pursuant to the Collaboration Agreement with Teva. We believe that our existing capital resources and interest on such resources will be sufficient to meet our current operating requirements into 2014. If, however, the Collaboration Agreement with Teva were to terminate or if Teva fails to fulfill its obligations under the Collaboration Agreement, or if patients live longer as a result of new or investigational therapies, or if the trials proceed slower than expected or are initiated later than expected, or if we change our development plans, acquire rights to new product candidates or cannot find third-party collaborators for our other product candidates, we may need additional capital sooner than we expect. Our future capital requirements will depend on many factors, including, without limitation:

- maintaining our partnership with Teva and Teva's ongoing commitment to develop custirsen in a timely manner;
- whether we experience delays in our pre-clinical and clinical development programs, or slower-than-anticipated product development or rate of events;
- the scope and results of our pre-clinical studies and clinical trials;
- whether opportunities to acquire additional product candidates arise and the costs of acquiring and developing those product candidates;

- whether we are able to enter into additional third-party collaborative partnerships to develop and/or commercialize any of our other product candidates on terms that are acceptable to us;
- the timing and requirements of, and the costs involved in, conducting studies required to obtain regulatory approvals for our product candidates from the FDA and comparable foreign regulatory agencies;
- the availability of third parties to perform the key development tasks for our product candidates, including conducting pre-clinical studies and clinical trials and manufacturing our product candidates to be tested in those studies and trials and the associated costs of those services;
- the costs involved in preparing, filing, prosecuting, maintaining, defending the validity of and enforcing patent claims and other costs related to patent rights and other intellectual property rights, including litigation costs and the results of such litigation; and
- whether we modify our development program, including terminating and starting new trials.

If we are unable to raise funds on acceptable terms when it becomes necessary to do so, we may not be able to continue developing our product candidates, acquire or develop additional product candidates or respond to competitive pressures or unanticipated requirements. For these reasons, any inability to raise additional funds when we require it could have a material adverse effect on our business.

Although we have entered into a Collaboration Agreement with Teva for custirsen, we have not yet partnered with third-party collaborators with respect to any of our other product candidates, and we cannot control whether we will be able to do so on favorable terms, if at all.

Our business strategy relies in part on potentially partnering successful product candidates with larger companies to complement our internal development and commercialization efforts. While we have successfully entered into a Collaboration Agreement with Teva with respect to custirsen, it may be difficult for us to find third parties that are willing to enter into a collaboration on acceptable economic terms, if at all, with respect to our other product candidates. We also will be competing with many other companies as we seek partners for our other product candidates and may not be able to compete successfully against those companies. If we are not able to enter into collaboration arrangements for our other product candidates and custirsen does not achieve regulatory approval or is delayed, we would be required to undertake and fund further development, clinical trials, manufacturing and commercialization activities solely at our own expense and risk. If we are unable to finance and/or successfully execute those expensive activities, our business could be materially and adversely affected, and we may be forced to discontinue clinical development of these product candidates.

Even if we or Teva receive regulatory approval to market our product candidates, the market may not be receptive to our products.

Even if our product candidates obtain regulatory approval, they may not gain market acceptance among physicians, patients, healthcare payors and/or the medical community. We believe that the degree of market acceptance will depend on a number of factors, including:

- timing of market introduction of competitive products;
- safety and efficacy of our products;
- prevalence and severity of any side effects;
- potential advantages or disadvantages over alternative treatments;
- strength of marketing and distribution support;
- price of our products, both in absolute terms and relative to alternative treatments; and
- availability of coverage and reimbursement from government and other third-party payors.

If our future product candidates fail to achieve market acceptance, we may not be able to generate significant revenue or achieve or sustain profitability.

If we were to be successfully sued related to our products or operations, we could face substantial liabilities that may exceed our resources.

We may be held liable if any of our products or operations cause injury or death or are found otherwise unsuitable during product testing, manufacturing, marketing or sale. These risks are inherent in the development of pharmaceutical products. We currently maintain Commercial General and Umbrella Liability policies with combined limits of $10 million per occurrence and in the aggregate, in addition to a $10 million per claim and annual aggregate product liability insurance policy related to our clinical trials consistent with industry standards. When necessary for our products, we intend to obtain additional product liability insurance. Insurance coverage may be prohibitively expensive, may not fully cover potential liabilities or may not be available in the future. Inability to obtain sufficient insurance coverage at an acceptable cost or otherwise to protect against potential product liability claims could prevent or inhibit the commercialization of our products. If we were to be sued for any injury caused by or associated with our products or operations, the litigation could consume substantial time and attention of our management, and the resulting liability could exceed our total assets.

If we fail to acquire and develop products or product candidates at all or on commercially reasonable terms, we may be unable to grow our business.

We currently do not have internal discovery capabilities and depend on pharmaceutical and biotechnology companies and other researchers to sell or license products or product candidates to us. To date, three of our product candidates have been derived from technologies discovered by the Vancouver Prostate Centre and licensed to us by the University of British Columbia, or UBC, and one candidate has been in-licensed from Bayer. We intend to continue to rely on the Vancouver Prostate Centre, UBC and other research institutions and other biotechnology or pharmaceutical companies as sources of product candidates. We cannot guarantee that the Vancouver Prostate Centre or UBC will continue to develop new product candidate opportunities, that we will continue to have access to such opportunities or that we will be able to purchase or license these product candidates on commercially reasonable terms, if at all. If we are unable to purchase or license new product candidates from the Vancouver Prostate Centre or UBC, we will be required to identify alternative sources of product candidates.

The success of our product pipeline strategy depends on our ability to identify, select and acquire pharmaceutical product candidates. Proposing, negotiating and implementing an economically viable product acquisition or license is a lengthy and complex process. We compete for partnering arrangements and license agreements with pharmaceutical and biotechnology companies and academic research institutions. Our competitors may have stronger relationships with third parties with whom we are interested in collaborating and/or may have more established histories of developing and commercializing products. As a result, our competitors may have a competitive advantage in entering into partnering arrangements with such third parties. In addition, even if we find promising product candidates, and generate interest in a partnering or strategic arrangement to acquire such product candidates, we may not be able to acquire rights to additional product candidates or approved products on terms that we find acceptable, if at all. If we fail to acquire and develop product candidates from others, we may be unable to grow our business.

We expect that any product candidate that we acquire rights to will require additional development efforts prior to commercial sale, including extensive clinical evaluation and approval by the FDA and non-U.S. regulatory authorities. All product candidates are subject to the risks of failure inherent in pharmaceutical product development, including the possibility that the product candidate will not be shown to be sufficiently safe and effective for approval by regulatory authorities. Even if the product candidates are approved, we can make no assurance that we would be capable of economically producing the product or that the product would be commercially successful.

We will need to retain additional personnel and expand our other resources in order to promote custirsen in the event we exercise our co-promotion option and develop our other product candidates. If we fail to effectively expand our operations, including attracting and retaining key management and scientific personnel, we may be unable to successfully develop or commercialize our product candidates and our business may be materially adversely affected.

We will need to expand and effectively manage our managerial, operational, financial, development and other resources in order to successfully pursue our development and commercialization efforts for our existing and future product candidates. Our success depends on our continued ability to attract, retain and motivate highly qualified personnel, such as management, pre-clinical and clinical personnel, including our executive officers Michelle Burris, Scott Cormack and Cindy Jacobs. In addition, although we have entered into employment agreements with each of Ms. Burris, Mr. Cormack and Dr. Jacobs, such agreements permit the executive to terminate his or her employment with us at any time, subject to providing us with advance written notice.

Should custirsen receive marketing approval in the United States and Canada, or should we exercise our co-promotion option, we would need to hire a substantial number of specialized personnel, including field-based medical affairs representatives. In turn, we would need to increase our administrative headcount to support such expanded development and commercialization operations with respect to our product candidates. Our ability to attract and retain qualified personnel in the future is subject to intense competition for qualified personnel among biotechnology, pharmaceutical and other businesses and our current financial position. The loss of the services of any of our senior management could delay or prevent the development and commercialization of our product candidates, or have other adverse effects on our business for an indefinite term. In particular, if we lose any members of our current senior management team, we may not be able to find suitable replacements in a timely fashion, if at all and our business may be harmed as a result. If any of such events were to occur, among other things, we may not be able to comply with our contractual obligations to Teva under our Collaboration Agreement or advance our product candidates, which could have a material adverse effect on our business.

We have scientific and clinical advisors who assist us in formulating our development and clinical strategies. These advisors are not our employees and may have commitments to, or consulting or advisory contracts with, other entities that may limit their availability to us. In addition, our advisors may have arrangements with other companies to assist those companies in developing products or technologies that may compete with ours.

We may encounter difficulties in managing our expected growth and in expanding our operations successfully.

As we advance our product candidates custirsen, OGX-427, OGX-225, and CSP-9222 through development and clinical trials, we will need to develop or expand our development, regulatory, manufacturing, marketing and sales capabilities or contract with third parties to provide these capabilities for us. Maintaining additional relationships and managing our future growth will impose significant added responsibilities on members of our management. We must be able to manage our development efforts effectively, manage our clinical trials effectively, hire, train and integrate additional management, development, administrative and sales and marketing personnel, improve our managerial, development, operational and finance systems and expand our facilities, all of which may impose a strain on our administrative and operational infrastructure.

Under the Collaboration Agreement, Teva is responsible for the commercialization costs associated with custirsen; however, if we were to exercise our co-promotion option, which we do not anticipate having sufficient funds to do, we would need to expand our marketing and sales capabilities. In addition, as we have primary responsibility for the oversight of the second-line chemotherapy trial in CRPC, we must be able to manage our development responsibilities effectively, which may impose a strain on our administrative and operational infrastructure.

Furthermore, we may acquire additional businesses, products or product candidates that complement or augment our existing business. Integrating any newly acquired business, product or product candidate could be

expensive and time-consuming. We may not be able to integrate any acquired business, product or product candidate successfully or operate any acquired business profitably. Our future financial performance will depend, in part, on our ability to manage any future growth effectively and our ability to integrate any acquired businesses. We may not be able to accomplish these tasks, which failure could prevent us from successfully growing our business.

We may be adversely affected if our controls over external financial reporting fail or are circumvented.

We regularly review and update our internal controls, disclosure controls and procedures, and corporate governance policies. In addition, we are required under the Sarbanes Oxley Act of 2002 to report annually on our internal control over financial reporting. If it were to be determined that our internal control over financial reporting is not effective, such shortcoming could have an adverse effect on our business and financial results and the price of our common stock could be negatively affected. This reporting requirement could also make it more difficult or more costly for us to obtain certain types of insurance, including director and officer liability insurance, and we may be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. Any system of internal controls, however well designed and operated, is based in part on certain assumptions and can provide only reasonable, not absolute, assurances that the objectives of the system are met. Any failure or circumvention of the controls and procedures or failure to comply with regulation concerning control and procedures could have a material effect on our business, results of operation and financial condition. Any of these events could result in an adverse reaction in the financial marketplace due to a loss of investor confidence in the reliability of our financial statements, which ultimately could negatively affect the market price of our shares, increase the volatility of our stock price and adversely affect our ability to raise additional funding. The effect of these events could also make it more difficult for us to attract and retain qualified persons to serve on our Board of Directors, or Board, and our Board committees and as executive officers.

Risks Related to Our Intellectual Property

Our proprietary rights may not adequately protect our technologies and product candidates.

Our commercial success will depend on our ability to obtain patents and/or regulatory exclusivity and maintain adequate protection for our technologies and product candidates in the United States and other countries. We will be able to protect our proprietary rights from unauthorized use by third parties only to the extent that our proprietary technologies and future product candidates are covered by valid and enforceable patents or are effectively maintained as trade secrets.

We and our collaborators, including Teva, intend to apply for additional patents covering both our technologies and product candidates, as we deem appropriate. We or our collaborators may, however, fail to apply for patents on important technologies or product candidates in a timely fashion, if at all. Our existing patents and any future patents we or our collaborators obtain may not be sufficiently broad to prevent others from practicing our technologies or from developing competing products and technologies. In addition, we do not always control the patent prosecution of subject matter that we license from others. Accordingly, we are sometimes unable to exercise a significant degree of control over such intellectual property as we would over our own. Moreover, the patent positions of biopharmaceutical companies are highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. As a result, the validity and enforceability of our patents cannot be predicted with certainty. In addition, we cannot guarantee that:

- we or our licensors were the first to make the inventions covered by each of our issued patents and pending patent applications;
- we or our licensors were the first to file patent applications for these inventions;
- others will not independently develop similar or alternative technologies or duplicate any of our technologies;

- any of our or our licensors' pending patent applications will result in issued patents;
- any of our or our licensors' patents will be valid or enforceable;
- any patents issued to us or our licensors and collaboration partners will provide us with any competitive advantages, or will not be challenged by third parties; and
- we will develop additional proprietary technologies that are patentable, or the patents of others will not have an adverse effect on our business.

The actual protection afforded by a patent varies on a product-by-product basis, from country to country and depends on many factors, including the type of patent, the scope of its coverage, the availability of regulatory related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patents. Our ability or the ability of our collaborators to maintain and solidify our proprietary position for our product candidates will depend on our success in obtaining effective claims and enforcing those claims once granted. Our issued patents and those that may issue in the future, or those licensed to us or our collaborators, may be challenged, invalidated, unenforceable or circumvented, and the rights granted under any issued patents may not provide us with proprietary protection or competitive advantages against competitors with similar products. Due to the extensive amount of time required for the development, testing and regulatory review of a potential product, it is possible that, before any of our product candidates can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thereby reducing any advantage of the patent.

We and our collaborators, including Teva, also rely on trade secrets to protect some of our technology, especially where it is believed that patent protection is appropriate or obtainable. However, trade secrets are difficult to maintain. While we use reasonable efforts to protect our trade secrets, our or our collaboration partners' employees, consultants, contractors or scientific and other advisors may unintentionally or willfully disclose our proprietary information to competitors. Enforcement of claims that a third party has illegally obtained and is using trade secrets is expensive, time consuming and uncertain. In addition, non-U.S. courts are sometimes less willing than U.S. courts to protect trade secrets. If our competitors independently develop equivalent knowledge, methods and know-how, we would not be able to assert our trade secrets against them and our business could be harmed.

We and our collaborators, including Teva, may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on all of our product candidates and products, when and if we have any, in every jurisdiction would be prohibitively expensive. Competitors may use our technologies in jurisdictions where we or our licensors have not obtained patent protection to develop their own products. These products may compete with our products, when and if we have any, and may not be covered by any of our or our licensors' patent claims or other intellectual property rights.

The laws of some non-U.S. countries do not protect intellectual property rights to the same extent as the laws of the United States, and many companies have encountered significant problems in protecting and defending such rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biotechnology and/or pharmaceuticals, which could make it difficult for us to stop the infringement of our patents. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business.

The intellectual property protection for our product candidates depends on third parties.

With respect to custirsen, OGX-427 and OGX-225, we have exclusively licensed from UBC certain issued patents and pending patent applications covering the respective antisense sequences underlying these product candidates and their commercialization and use and we have licensed from Isis Pharmaceuticals, Inc., or Isis,

certain issued patents and pending patent applications directed to product compositions and chemical modifications used in product candidates for commercialization, use and the manufacturing thereof, as well as some alternative antisense sequences. We have also received a sublicense from Isis under certain third-party patent portfolios directed to such modifications. We have entered into an exclusive in-licensing agreement with Bayer for development of caspase activators that are presently being evaluated in pre-clinical studies.

The patents and pending patent applications underlying our licenses do not cover all potential product candidates, modifications and uses. In the case of patents and patent applications licensed from Isis, we do not have and have not had any control over the filing, prosecution or enforcement of these patents or patent applications. In the case of patents and patent applications licensed from Bayer, while we did not have any control over the filing of the patents and patent applications before the effective date of the Bayer license, we have had control over the filing and prosecution of these patents and patent applications after the effective date of the Bayer license. Under certain circumstances, we also have the right to enforce patents and patent applications licensed from Bayer. We cannot be certain that such prosecution efforts have been or will be conducted in compliance with applicable laws and regulations or will result in valid and enforceable patents. We also cannot be assured that our licensors or their respective licensing partners will agree to enforce any such patent rights at our request or devote sufficient efforts to attain a desirable result. Any failure by our licensors or any of their respective licensing partners to properly protect the intellectual property rights relating to our product candidates could have a material adverse effect on our financial condition and results of operation.

We may become involved in disputes with Teva or potential future collaborators over intellectual property ownership, and publications by our research collaborators and scientific advisors could impair our ability to obtain patent protection or protect our proprietary information, which, in either case, could have a significant effect on our business.

Inventions discovered under research, material transfer or other such collaborative agreements, including our Collaboration Agreement with Teva, may become jointly owned by us and the other party to such agreements in some cases and the exclusive property of either party in other cases. Under some circumstances, it may be difficult to determine who owns a particular invention, or whether it is jointly owned, and disputes could arise regarding ownership of those inventions. These disputes could be costly and time consuming and an unfavorable outcome could have a significant adverse effect on our business if we were not able to protect or license rights to these inventions. In addition, our research collaborators and scientific advisors generally have contractual rights to publish our data and other proprietary information, subject to our prior review. Publications by our research collaborators and scientific advisors containing such information, either with our permission or in contravention of the terms of their agreements with us, may impair our ability to obtain patent protection or protect our proprietary information, which could significantly harm our business.

The patent protection for our product candidates or products may expire before we are able to maximize their commercial value, which may subject us to increased competition and reduce or eliminate our opportunity to generate product revenue.

The patents for our product candidates have varying expiration dates and, when these patents expire, we may be subject to increased competition and we may not be able to recover our development costs. For example, certain of the U.S. patents directed to custirsen and its use that have been licensed from UBC are scheduled to expire in 2020 and 2021. In some of the larger economic territories, such as the United States and Europe, patent term extension/restoration may be available to compensate for time taken during aspects of the product candidate's regulatory review. We cannot, however, be certain that an extension will be granted or, if granted, what the applicable time period or the scope of patent protection afforded during any extended period will be. In addition, even though some regulatory agencies may provide some other exclusivity for a product candidate under its own laws and regulations, we may not be able to qualify the product candidate or obtain the exclusive time period.

If we are unable to obtain patent term extension/restoration or some other exclusivity, we could be subject to increased competition and our opportunity to establish or maintain product revenue could be substantially reduced or eliminated. Furthermore, we may not have sufficient time to recover our development costs prior to the expiration of our U.S. and non-U.S. patents.

We may incur substantial costs as a result of litigation or other proceedings relating to patent and other intellectual property rights, and we may be unable to protect our rights to, or the use of, our technology.

If we choose to go to court to stop someone else from using the inventions claimed in our patents or our licensed patents, that individual or company has the right to ask the court to rule that these patents are invalid and/or should not be enforced against that third party. These lawsuits are expensive and would consume time and other resources even if we were successful in stopping the infringement of these patents. In addition, there is a risk that the court will decide that these patents are invalid or unenforceable and that we do not have the right to stop the other party from using the inventions. There is also the risk that, even if the validity or unenforceability of these patents is upheld, the court will refuse to stop the other party on the grounds that such other party's activities do not infringe our rights.

If we wish to use the technology or compound claimed in issued and unexpired patents owned by others, we will need to obtain a license from the owner, enter into litigation to challenge the validity or enforceability of the patents or incur the risk of litigation in the event that the owner asserts that we infringed its patents. The failure to obtain a license to technology or the failure to challenge an issued patent that we may require to discover, develop or commercialize our product candidates may have a material adverse effect on us.

If a third party asserts that we infringed its patents or other proprietary rights, we could face a number of risks that could seriously harm our results of operations, financial condition and competitive position, including:

- patent infringement and other intellectual property claims, which would be costly and time consuming to defend, whether or not the claims have merit, and which could delay the regulatory approval process and divert management's attention from our business;
- substantial damages for past infringement, which we may have to pay if a court determines that our product candidates or technologies infringe a competitor's patent or other proprietary rights;
- a court prohibiting us from selling or licensing our technologies or future drugs unless the third party licenses its patents or other proprietary rights to us on commercially reasonable terms, which it is not required to do; and
- if a license is available from a third party, we may have to pay substantial royalties or lump-sum payments or grant cross licenses to our patents or other proprietary rights to obtain that license.

The biotechnology industry has produced a proliferation of patents, and it is not always clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. If we are sued for patent infringement, we would need to demonstrate that our product candidates or methods of use either do not infringe the patent claims of the relevant patent, and/or that the patent claims are invalid, and/or that the patent is unenforceable and we may not be able to do this. Proving invalidity, in particular, is difficult since it requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents.

U.S. patent laws as well as the laws of some foreign jurisdictions provide for provisional rights in published patent applications beginning on the date of publication, including the right to obtain reasonable royalties, if a patent subsequently issues and certain other conditions are met.

Because some patent applications in the United States may be maintained in secrecy until the patents are issued, because patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing and because publications in the scientific literature often lag behind actual

discoveries, we cannot be certain that others have not filed patent applications for technology covered by our licensors' issued patents or our pending applications or our licensors' pending applications, or that we or our licensors were the first to invent the technology.

Patent applications filed by third parties that cover technology similar to ours may have priority over our or our licensors' patent applications and could further require us to obtain rights to issued patents covering such technologies. If another party files a U.S. patent application on an invention similar to ours, we may elect to participate in or be drawn into an interference proceeding declared by the U.S. Patent and Trademark Office to determine priority of invention in the United States. The costs of these proceedings could be substantial, and it is possible that such efforts would be unsuccessful, resulting in a loss of our U.S. patent position with respect to such inventions. Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations. We cannot predict whether third parties will assert these claims against us or against the licensors of technology licensed to us, or whether those claims will harm our business. If we are forced to defend against these claims, whether they are with or without any merit and whether they are resolved in favor of or against us or our licensors, we may face costly litigation and diversion of management's attention and resources. As a result of these disputes, we may have to develop costly non-infringing technology, or enter into licensing agreements. These agreements, if necessary, may be unavailable on terms acceptable to us, if at all, which could seriously harm our business or financial condition.

If we breach any of the agreements under which we license rights to our product candidates or technology from third parties, we could lose license rights that are important to our business. Certain of our license agreements may not provide an adequate remedy for a breach by the licensor.

We license the development and commercialization rights for most of our product candidates, including custirsen, OGX-427, OGX-225 and CSP-9222, and we expect to enter into similar licenses in the future. Under such licenses, we are subject to various obligations such as sublicensing, royalty and milestone payments, annual maintenance fees, limits on sublicensing, insurance obligations and the obligation to use commercially reasonable best efforts to develop and exploit the licensed technology. If we fail to comply with any of these obligations or otherwise breach these agreements, our licensors may have the right to terminate the license in whole or in part or to terminate the exclusive nature of the license. Loss of any of these licenses or the exclusivity rights provided by the licenses could harm our financial condition and results of operations. In addition, certain of our license agreements with UBC eliminate our ability to obtain money damages in respect of certain claims against UBC.

Under the terms of our Collaboration Agreement with Teva, we are required to use commercially reasonable efforts to maintain and not to breach in any material manner certain of our third-party license agreements relating to custirsen. If we breach any of these agreements in a material manner, we would be in breach of the Collaboration Agreement, which would allow Teva to terminate the Collaboration Agreement.

We may be subject to damages resulting from claims that we, or our employees or consultants, have wrongfully used or disclosed alleged trade secrets of third parties.

Many of our employees were previously employed, and certain of our consultants are currently employed, at universities or biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we have not received any claim to date, we may be subject to claims that these employees or consultants or we have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of these current or former employers. Litigation may be necessary to defend against these claims. If we fail in defending such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. We may be subject to claims that employees of our partners or licensors of technology licensed by us have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. We may become involved in litigation to defend against these claims. If we fail in defending such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel.

Risks Related to our Common Stock and Other Securities

The price for our common stock is volatile.

The market prices for our common stock and that of emerging growth companies generally have historically been highly volatile. Future announcements concerning us or our competitors may have a significant effect on the market price of our common stock. The stock markets also experience significant price and volume fluctuation unrelated to the operating performance of particular companies. These market fluctuations may also adversely affect the market price of our common stock.

An increase in the market price of our common stock, which is uncertain and unpredictable, may be the sole source of gain from an investment in our common stock. An investment in our common stock may not be appropriate for investors who require dividend income. We have never declared or paid cash dividends on our capital stock and do not anticipate paying any cash dividends on our capital stock in the foreseeable future. We currently intend to retain all available funds and any future earnings to fund the development and growth of our business. As a result, capital appreciation, if any, of our common stock will be the sole source of gain for stockholders for the foreseeable future. Accordingly, an investment in our common stock may not be appropriate for investors who require dividend income.

If we raise additional financing, the terms of such transactions may cause dilution to existing stockholders or contain terms that are not favorable to us.

To date, our sources of cash have been limited primarily to proceeds from the private or public placement of our securities and proceeds from the Collaboration Agreement with Teva. In the future, we may seek to raise additional financing through private placements or public offerings of our equity or debt securities. We cannot be certain that additional funding will be available on acceptable terms, if at all. To the extent that we raise additional financing by issuing equity securities, our stockholders may experience significant dilution. Any debt financing, if available, may involve restrictive covenants, such as limitations on our ability to incur additional indebtedness, limitations on our ability to acquire or license intellectual property rights and other operating restrictions that could adversely affect our ability to conduct our business.

We are at risk of securities class action litigation.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because our stock price and those of other biotechnology and biopharmaceutical companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

Anti-takeover provisions in our stockholder rights plan, our charter documents and under Delaware law could make a third-party acquisition of us difficult.

We have a stockholder rights plan that may have the effect of discouraging unsolicited takeover proposals. Specifically, the rights issued under the stockholder rights plan could cause significant dilution to a person or group that attempts to acquire us on terms not approved in advance by our Board. In addition, our certificate of incorporation and bylaws contain provisions that may discourage unsolicited takeover proposals that stockholders may consider to be in their best interests. These provisions include the ability of our Board to designate the terms of and issue new series of preferred stock and the ability of our Board to amend our bylaws without stockholder approval. In addition, as a Delaware corporation, we are subject to Section 203 of the Delaware General Corporation Law, which generally prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the date that the stockholder became an interested stockholder, unless certain specific requirements are met as set forth in Section 203. Collectively, these provisions could make a third-party acquisition of us difficult or could discourage transactions that otherwise could involve payment of a premium over prevailing market prices for our common stock.

Risks Related to Our Industry

The regulatory approval process is expensive, time consuming and uncertain and may prevent us from obtaining approvals for the commercialization of some or all of our product candidates.

The research, testing, manufacturing, labeling, approval, selling, marketing and distribution of drug products are subject to extensive regulation by the FDA and non-U.S. regulatory authorities, which regulations differ from country to country. We are not permitted to market our product candidates in the United States until we receive approval of a New Drug Application, or NDA, from the FDA. We have not submitted an application for or received marketing approval for any of our product candidates. Obtaining approval of an NDA can be a lengthy, expensive and uncertain process. In addition, failure to comply with FDA, non-U.S. regulatory authorities' or other applicable United States and non-U.S. regulatory requirements may, either before or after product approval, if any, subject us to administrative or judicially imposed sanctions, including:

- restrictions on the products, manufacturers or manufacturing process;
- warning letters;
- civil and criminal penalties;
- injunctions;
- suspension or withdrawal of regulatory approvals;
- product seizures, detentions or import bans;
- voluntary or mandatory product recalls and publicity requirements;
- total or partial suspension of production;
- imposition of restrictions on operations, including costly new manufacturing requirements; and
- refusal to approve pending NDAs or supplements to approved NDAs.

Regulatory approval of an NDA or NDA supplement is not guaranteed, and the approval process is expensive and may take several years. The FDA also has substantial discretion in the drug approval process. Despite the time and expense exerted, failure can occur at any stage, and we could encounter problems that could cause us to abandon clinical trials or to repeat or perform additional pre-clinical studies and clinical trials. The number of pre-clinical studies and clinical trials that will be required for FDA approval varies depending on the drug candidate, the disease or condition that the drug candidate is designed to address, and the regulations applicable to any particular drug candidate. The FDA can delay, limit or deny approval of a drug candidate for many reasons, including:

- a drug candidate may not be deemed safe or effective;
- the FDA may not find the data from pre-clinical studies and clinical trials sufficient;
- the FDA might not approve our third-party manufacturer's processes or facilities;
- the FDA may change its approval policies or adopt new regulations; and
- third-party products may enter the market and change approval requirements.

Even if we obtain regulatory approvals for our product candidates, the terms of approvals and ongoing regulation of our product candidates may limit how we manufacture and market our product candidates, which could materially affect our ability to generate revenue.

If any of our product candidates are approved, the approved product and its manufacturer will be subject to continual review. Any regulatory approval that we receive for a product candidate is likely to be subject to limitations on the indicated uses for which the end product may be marketed or include requirements for

potentially costly post-approval follow-up clinical trials. In addition, if the FDA and/or non-U.S. regulatory authorities approve any of our product candidates, the labeling, packaging, adverse event reporting, storage, advertising and promotion for the end product will be subject to extensive regulatory requirements. We and the manufacturers of our products, when and if we have any, will also be required to comply with cGMP regulations, which include requirements relating to quality control and quality assurance, as well as the corresponding maintenance of records and documentation. Further, regulatory agencies must approve these manufacturing facilities before they can be used to manufacture our products, when and if we have any, and these facilities are subject to ongoing regulatory inspection. If we fail to comply with the regulatory requirements of the FDA and other non-U.S. regulatory authorities, or if previously unknown problems with our products, when and if we have any, manufacturers or manufacturing processes are discovered, we could be subject to administrative or judicially imposed sanctions, including:

- restrictions on the products, manufacturers or manufacturing process;
- warning letters;
- civil or criminal penalties or fines;
- injunctions;
- product seizures, detentions or import bans;
- voluntary or mandatory product recalls and publicity requirements;
- suspension or withdrawal of regulatory approvals;
- total or partial suspension of production;
- imposition of restrictions on operations, including costly new manufacturing requirements; and
- refusal to approve pending NDAs or supplements to approved NDAs.

In addition, the FDA and non-U.S. regulatory authorities may change their policies and additional regulations may be enacted that could prevent or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States, Canada or abroad. If we are not able to maintain regulatory compliance, we would likely not be permitted to market our future product candidates and we may not achieve or sustain profitability.

There is a high risk that our drug development activities will not result in commercial products.

Our product candidates are in various stages of development and are prone to the risks of failure inherent in drug development. We will need to complete significant additional clinical trials before we can demonstrate that our product candidates are safe and effective to the satisfaction of the FDA and non-U.S. regulatory authorities. Clinical trials are expensive and uncertain processes that take years to complete. Failure can occur at any stage of the process, and successful early clinical trials do not ensure that later clinical trials will be successful. Product candidates in later-stage clinical trials may fail to show desired efficacy and safety traits despite having progressed through initial clinical trials. A number of companies in the pharmaceutical industry have suffered significant setbacks in advanced clinical trials, even after obtaining promising results in earlier clinical trials. In addition, a clinical trial may prove successful with respect to a secondary objective, but fail to demonstrate clinically significant benefits with respect to a primary objective. Failure to satisfy a primary objective in a phase 3 clinical trial (registration trial) would generally mean that a product candidate would not receive regulatory approval.

If government and third-party payors fail to provide coverage and adequate reimbursement rates for our product candidates, our revenue and potential for profitability will be reduced.

In the United States and elsewhere, our product revenue will depend principally on the reimbursement rates established by third-party payors, including government health administration authorities, managed-care providers,

public health insurers, private health insurers and other organizations. These third-party payors are increasingly challenging the price, and examining the cost-effectiveness, of medical products and services. In addition, significant uncertainty exists as to the reimbursement status, if any, of newly approved drugs, pharmaceutical products or product indications. We may need to conduct post-marketing clinical trials in order to demonstrate the cost-effectiveness of our products, if any. Such clinical trials may require us to commit a significant amount of management time and financial and other resources. If reimbursement of such product is unavailable or limited in scope or amount or if pricing is set at unsatisfactory levels, our revenue could be reduced.

In some countries other than the United States, particularly the countries of the European Union and Canada, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, obtaining pricing approval from governmental authorities can take six to 12 months or longer after the receipt of regulatory marketing approval of a product for an indication. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of one of our product candidates to other available therapies. If reimbursement of such product candidate is unavailable or limited in scope or amount or if pricing is set at unsatisfactory levels, our revenue could be reduced.

Domestic and foreign governments continue to propose and pass legislation designed to reduce the cost of healthcare, including drugs. In the United States, there have been, and we expect that there will continue to be, federal and state proposals to implement similar governmental control. In addition, increasing emphasis on managed care in the United States will continue to put pressure on the pricing of pharmaceutical products. For example, the Medicare Prescription Drug Improvement and Modernization Act of 2003 reforms the way Medicare will cover and reimburse pharmaceutical products. The legislation expands Medicare coverage for drug purchases by the elderly and eventually will introduce a new reimbursement methodology based on average sales prices for certain drugs. In addition, the new legislation provides authority for limiting the number of outpatient drugs that will be covered in any therapeutic class. As a result of the new legislation and the expansion of federal coverage of drug products, we expect that there will be additional pressure to contain and reduce costs. The Medicaid program and state healthcare laws and regulations may also be modified to change the scope of covered products and/or reimbursement methodology. Cost control initiatives could decrease the established reimbursement rates that we receive for any products in the future, which would limit our revenue and profitability. Legislation and regulations affecting the pricing of pharmaceutical products, including custirsen, may change at any time, which could further limit or eliminate reimbursement rates for custirsen or other product candidates.

Failure to obtain regulatory approval outside of the United States and Canada would prevent us or Teva from marketing our product candidates abroad.

We intend to market certain of our existing and future product candidates outside of the United States and Canada. In order to market our existing and future product candidates in the European Union and many other non-North American markets, we must obtain separate regulatory approvals. We have had limited interactions with non-North American regulatory authorities. Approval procedures vary among countries and can involve additional testing, and the time required to obtain approval may differ from that required to obtain FDA approval. Approval by the FDA or other regulatory authorities does not ensure approval by regulatory authorities in other countries, and approval by one or more non-North American regulatory authorities does not ensure approval by regulatory authorities in other countries or by the FDA. The non-North American regulatory approval process may include all of the risks associated with obtaining FDA approval. We may not obtain non-North American regulatory approvals on a timely basis, if at all. We may not be able to file for non-North American regulatory approvals and may not receive necessary approvals to commercialize our existing and future product candidates in any market.

USE OF PROCEEDS

We expect the net proceeds from this offering to be approximately $46.8 million (or approximately $53.9 million if the underwriters exercise their overallotment option in full), after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

We currently intend to use the net proceeds we receive from the sale of the shares in this offering to advance our proprietary product OGX-427 and potentially our pre-clinical product candidates as well as for general corporate purposes. Pending such uses, the net proceeds will be held in highly liquid investments.

DILUTION

Our net tangible book value on December 31, 2011 was approximately $30.9 million, or approximately $3.17 per share of common stock based upon 9,749,819 shares outstanding. Net tangible book value per share is determined by dividing our net tangible book value, which consists of tangible assets less total liabilities, by the number of shares of common stock outstanding on that date. Without taking into account any other changes in our net tangible book value after December 31, 2011, other than to give effect to our receipt of the estimated net proceeds from the sale of 4,165,000 shares at an offering price of $12.00 per share, less the underwriting fees and our estimated offering expenses, our net tangible book value as of December 31, 2011, after giving effect to the items above, would have been approximately $77.7 million, or $5.58 per share. This represents an immediate increase in net tangible book value of $2.41 per share of common stock to our existing stockholders and an immediate dilution in net tangible book value of $6.42 per share of common stock to purchasers in this offering. The following table illustrates this calculation on a per share basis:

Public offering price per share		$12.00
Net tangible book value per share as of December 31, 2011	$3.17	
Increase in net tangible book value per share attributable to the offering	2.41	
As-adjusted net tangible book value per share after giving effect to the offering(1)		5.58
Dilution in net tangible book value per share to new investors		$ 6.42

(1) Based on net proceeds of the offering of approximately $46.8 million.

The foregoing table is based on 9,749,819 shares of our common stock outstanding as of December 31, 2011 and excludes 766,328 shares of our common stock issuable upon the exercise of stock options outstanding as of December 31, 2011, at a weighted average exercise price of $9.82 per share, and 1,587,301 shares of common stock issuable upon the exercise of warrants outstanding as of December 31, 2011, at an exercise price of $20.00 per share.

UNDERWRITING

Subject to the terms and conditions set forth in an underwriting agreement between us and Leerink Swann LLC and Stifel, Nicolaus & Company, Incorporated, as representatives of the several underwriters, each of the several underwriters named below has agreed to purchase from us the aggregate number of shares set forth opposite its name below:

Underwriter	Number of Shares
Leerink Swann LLC	1,666,000
Stifel, Nicolaus & Company, Incorporated	1,666,000
Lazard Capital Markets LLC	624,750
William Blair & Company, L.L.C.	208,250
Total	4,165,000

The underwriting agreement provides that the obligations of the several underwriters are subject to various conditions, including approval of legal matters by counsel. The nature of the underwriters' obligations commits them to purchase and pay for all of the shares listed above if any are purchased.

The underwriters expect to deliver the securities offered hereby on or about March 21, 2012.

Option to Purchase Additional Shares

We have granted a 30-day option to the underwriters to purchase a total of up to 624,750 additional shares of our common stock from us at the public offering price per share less the underwriting discounts and commissions per share, as set forth on the cover page of this prospectus supplement. If the underwriters exercise this option in whole or in part, then the underwriters will be severally committed, subject to the conditions described in the underwriting agreement, to purchase the additional shares of our common stock in proportion to their respective commitments set forth in the prior table.

Commissions and Discounts

The underwriters propose to offer the shares directly to the public at the public offering price set forth on the cover page of this prospectus supplement and to certain dealers at that price less a concession of not more than $0.432 per share. After this offering, the offering price and other selling terms may be changed by the underwriters. The shares are offered subject to receipt and acceptance by the underwriters and to the other conditions of the offering, including the right to reject orders in whole or in part.

The following table summarizes the compensation to be paid to the underwriters by us and the proceeds, before expenses, payable to us, both on a per share basis and in total, assuming either no exercise or full exercise by the underwriters of their option to purchase additional shares:

		Total	
	Per Share	Without Option	With Option
Public offering price	$ 12.00	$ 49,980,000	$ 57,477,000
Underwriting discounts and commissions	$ 0.72	$ 2,998,800	$ 3,448,620
Proceeds, before expenses, to us	$ 11.28	$ 46,981,200	$ 54,028,380

In compliance with the guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8.0% of the aggregate amount of the securities offered pursuant to this prospectus supplement.

We estimate our out-of-pocket expenses for this offering will be approximately $175,000.

Indemnification of Underwriters

We will indemnify the underwriters against some civil liabilities, including liabilities under the Securities Act. If we are unable to provide this indemnification, we will contribute to payments the underwriters may be required to make in respect of those liabilities.

No Sales of Similar Securities

The underwriters will require all of our directors and officers to agree not to offer, sell, agree to sell, directly or indirectly, or otherwise dispose of any shares of common stock or any securities convertible into or exchangeable for shares of common stock, subject to certain exceptions, without the prior written consent of Leerink Swann LLC and Stifel, Nicolaus & Company, Incorporated for a period of 90 days after the date of this prospectus supplement. Notwithstanding the foregoing, if (a) during the last 17 days of this 90-day period, we release or publish financial results or results from operations or announce material news or a material event or (b) prior to the expiration of this 90-day period, we announce that we will release or publish financial results or results from operations during the 15-day period following the last day of the 90-day period, then in each case the above restrictions will be automatically extended until the expiration of the 18-day period beginning on the date of release of the earnings results or the announcement of the material news or material event, as applicable, subject to certain exceptions, unless Leerink Swann LLC and Stifel, Nicolaus & Company, Incorporated waive, in writing, such extension.

Subject to certain exceptions, we have agreed that for a period of 90 days after the date of this prospectus supplement, subject to extension as described above, we will not, without the prior written consent of Leerink Swann LLC and Stifel, Nicolaus & Company, Incorporated, offer, sell, contract to sell or otherwise dispose of any shares of common stock or any securities that are substantially similar to the common stock, including any securities that are convertible into or exchangeable for, or that represent the right to receive, shares of common stock or any such substantially similar securities, except for:

- the securities offered in this offering;
- the shares of common stock issuable upon conversion or exercise of convertible or exercisable securities outstanding on the date of this prospectus supplement; and
- the shares of our common stock that are issued under our existing stock option plans.

The NASDAQ Capital Market Listing

Our common stock is quoted on The NASDAQ Capital Market under the symbol “OGXI.”

Stabilizing Transactions and Penalty Bids

In order to facilitate this offering of our common stock, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the market price of our common stock. Specifically, the underwriters may sell more shares of common stock than they are obligated to purchase under the underwriting agreement, creating a short position. A short sale is covered if the short position is no greater than the number of shares of common stock available for purchase by the underwriters under the option to purchase additional shares referred to above. The underwriters may close out a covered short sale by exercising the option to purchase additional shares or purchasing common stock in the open market. In determining the source of common stock to close out a covered short sale, the underwriters may consider, among other things, the market price of common stock compared to the price payable under the option to purchase additional shares. The underwriters may also sell shares of common stock in excess of the option to purchase additional shares, creating a naked short position. The underwriters must close out any naked short position by purchasing shares of common stock in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market after the date of pricing of this offering that could adversely affect investors who purchase in this offering.

As an additional means of facilitating this offering, the underwriters may bid for, and purchase, common stock in the open market to stabilize the price of our common stock, so long as stabilizing bids do not exceed a specified maximum. The underwriting syndicate may also reclaim selling concessions allowed to an underwriter or a dealer for distributing common stock in this offering if the underwriting syndicate repurchases previously distributed common stock to cover syndicate short positions or to stabilize the price of the common stock.

The foregoing transactions, if commenced, may raise or maintain the market price of our common stock above independent market levels or prevent or retard a decline in the market price of the common stock.

The foregoing transactions, if commenced, may be effected on The NASDAQ Capital Market or otherwise. Neither we nor any of the underwriters makes any representation that the underwriters will engage in any of these transactions and these transactions, if commenced, may be discontinued at any time without notice. Neither we nor any of the underwriters makes any representation or prediction as to the direction or magnitude of the effect that the transactions described above, if commenced, may have on the market price of our common stock.

Miscellaneous

The underwriters have provided, and may in the future provide, various investment banking and other financial services for us for which services they have received, and may receive in the future, customary fees.

Lazard Frères & Co. LLC referred this transaction to Lazard Capital Markets LLC and will receive a referral fee from Lazard Capital Markets LLC in connection therewith.

LEGAL MATTERS

Our counsel, Fenwick & West LLP, Seattle, Washington, will pass upon the validity of the securities being offered hereby. The underwriters are being represented in connection with this offering by Goodwin Procter LLP, New York, New York.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2011, and the effectiveness of internal control over financial reporting as of December 31, 2011, as set forth in its reports, which are incorporated by reference in this prospectus supplement, the accompanying prospectus and elsewhere in the registration statement on Form S-3 of which this prospectus supplement and the accompanying prospectus are a part. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's reports, given on such firm's authority as an expert in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the securities covered by this prospectus supplement and the accompanying prospectus. This prospectus supplement and the accompanying prospectus, which are part of the registration statement, do not contain all of the information set forth in the registration statement or the exhibits and schedules filed therewith. For further information with respect to us and the securities covered by this prospectus supplement and the accompanying prospectus, please see the registration statement and the exhibits filed with the registration statement. A copy of the registration statement and the exhibits filed with the registration statement may be inspected without charge at the Public Reference Room maintained by the SEC, located at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the Public Reference Room. The SEC also maintains an Internet website that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC. The address of the website is http://www.sec.gov.

We are subject to the information and periodic reporting requirements of the Exchange Act and, in accordance therewith, we file periodic reports, proxy statements and other information with the SEC. Such periodic reports, proxy statements and other information are available for inspection and copying at the Public Reference Room and website of the SEC referred to above. We maintain a website at http://www.oncogenex.com. You may access our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed pursuant to Sections 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. Our website and the information contained on that site, or connected to that site, are not incorporated into and are not a part of this prospectus supplement or the accompanying prospectus.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC and applicable law permits us to "incorporate by reference" into this prospectus supplement and the accompanying prospectus information that we have or may in the future file with or furnish to the SEC. This means that we can disclose important information by referring you to those documents. You should read carefully the information incorporated herein by reference because it is an important part of this prospectus supplement and the accompanying prospectus. We hereby incorporate by reference the following documents into this prospectus supplement and the accompanying prospectus:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2011, filed with the SEC on March 8, 2012;
- our Current Report on Form 8-K filed with the SEC on March 16, 2012;
- the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on September 27, 1995 under Section 12 of the Exchange Act, including any amendment or report filed for the purpose of updating such description; and
- and the description of our preferred stock purchase rights contained in our registration statement on Form 8-A filed with the SEC on July 25, 2002 under Section 12 of the Exchange Act, including any amendment or report filed for the purpose of updating such description.

Additionally, all documents filed by us with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus supplement until the termination or completion of this offering shall be deemed to be incorporated by reference into this prospectus supplement and the accompanying prospectus (other than current reports or portions thereof furnished under Item 2.02 or 7.01 of Form 8-K, unless such current reports or portions thereof specifically reference their contents as being filed) from the respective dates of the filing of such documents. Any information that we subsequently file with the SEC that is incorporated by reference as described above will automatically update and supersede any previous information that is part of this prospectus supplement and the accompanying prospectus.

Upon written or oral request, we will provide you without charge, a copy of any or all of the documents incorporated by reference into this prospectus supplement and accompanying prospectus, other than exhibits to those documents unless the exhibits are specifically incorporated by reference in the documents. Please send requests to OncoGenex Pharmaceuticals, Inc., Attn: Cameron Lawrence, 1522 217th Place SE, Suite 100, Bothell, Washington 98021, telephone number (425) 686-1500.

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PROSPECTUS

$60,000,000

OncoGenex Pharmaceuticals, Inc.

Common Stock, Preferred Stock,
Debt Securities and Warrants

We may offer and sell any combination of common stock, preferred stock, warrants, debt securities and any combination thereof, with a total value of up to $60,000,000.

This prospectus provides a general description of securities we may offer and sell from time to time. Each time we sell those securities, we will provide their specific terms in a supplement to this prospectus. This prospectus supplement may also add, update or change information contained in this prospectus. You should read this prospectus and the applicable prospectus supplement carefully before you invest in any securities. This prospectus is not an offer and may not be used to consummate a sale of securities unless accompanied by the applicable prospectus supplement.

We may offer and sell these securities, from time to time, to or through one or more underwriters, dealers and agents, or directly to purchasers, on a continuous or delayed basis, at prices and on other terms to be determined at the time of offering. If we use agents, underwriters or dealers to sell the securities, we will name them and describe their compensation in a prospectus supplement.

Our common stock is listed on The NASDAQ Capital Market under the symbol “OGXI.”

An investment in our securities involves a high degree of risk. You should carefully consider the information under the heading “Risk Factors” beginning on page 6 of this prospectus before investing in our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is November 21, 2011

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or SEC, using a "shelf" registration process. Under this shelf registration process, from time to time, we may sell any combination of the securities described in this prospectus in one or more offerings, up to a total dollar amount of $60,000,000. We have provided to you in this prospectus a general description of the securities we may offer. Each time we sell securities under this shelf registration process, we will provide a prospectus supplement that will contain specific information about the terms of the offering. We may also add, update or change in the prospectus supplement any of the information contained in this prospectus. To the extent there is a conflict between the information contained in this prospectus and the prospectus supplement, you should rely on the information in the prospectus supplement; provided that, if any statement in one of these documents is inconsistent with a statement in another document having a later date — for example, a document incorporated by reference in this prospectus or any prospectus supplement — the statement in the document having the later date modifies or supersedes the earlier statement. You should read both this prospectus and any prospectus supplement together with additional information described under the next heading "Where You Can Find More Information."

You should rely only on the information contained in or incorporated by reference into this prospectus or any applicable prospectus supplement. No dealer, salesperson or any other person is authorized to give any information or to make any representation other than the information and representations contained in or incorporated by reference into this prospectus or any applicable prospectus supplement. If different information is given or different representations are made, you may not rely on that information or those representations as having been authorized by us. You may not imply from the delivery of this prospectus and any applicable prospectus supplement, nor from a sale made under this prospectus and any applicable prospectus supplement, that our affairs are unchanged since the date of this prospectus and any applicable prospectus supplement or that the information contained in any document incorporated by reference is accurate as of any date other than the date of the document incorporated by reference, regardless of the time of delivery of this prospectus and any applicable prospectus supplement or any sale of a security. This prospectus and any applicable prospectus supplement may only be used where it is legal to sell the securities.

THIS PROSPECTUS MAY NOT BE USED TO OFFER AND SELL SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

In this prospectus, unless the context otherwise requires, the terms "OncoGenex Pharmaceuticals, Inc.," the "Company," "OncoGenex," "we," "us," and "our" refer to OncoGenex Pharmaceuticals, Inc.

PROSPECTUS SUMMARY

This summary may not contain all the information that you should consider before investing in securities. You should read the entire prospectus and the information incorporated by reference in this prospectus carefully, including "Risk Factors" and the financial data and related notes and other information incorporated by reference, before making an investment decision.

Company Overview

OncoGenex is a biopharmaceutical company committed to the development and commercialization of new cancer therapies that address treatment resistance in cancer patients. We have four product candidates in our pipeline, custirsen, OGX-427, OGX-225, and CSP-9222, each of which has a distinct mechanism of action and represents a unique opportunity for cancer drug development. Of the product candidates in our pipeline, custirsen and OGX-427 are clinical-stage assets.

Our product candidates custirsen, OGX-427, and OGX-225 focus on mechanisms of treatment resistance in cancer. These products are designed to address treatment resistance by blocking the production of specific proteins that are thought to promote survival of tumor cells and are over-produced in response to cancer treatments. Our aim in targeting these particular proteins is to disable tumor cells' adaptive defenses, thereby rendering the tumor cells more susceptible to attack by cancer therapies, including chemotherapy. We believe this approach will increase survival time and improve the quality of life for cancer patients. Product candidate CSP-9222 is the lead compound from a family of caspase activators that have been in-licensed from Bayer and demonstrate activation of programmed cell death in pre-clinical models.

The Securities We May Offer

With this prospectus, we may offer common stock, preferred stock, debt securities and warrants, or any combination of the foregoing. The aggregate offering price of securities that we offer with this prospectus will not exceed $60,000,000. Each time we offer securities with this prospectus, we will provide offerees with a prospectus supplement that will contain the specific terms of the securities being offered. The following is a summary of the securities we may offer with this prospectus.

Common Stock

We may offer shares of our common stock, par value $0.001 per share.

Preferred Stock

We may offer shares of our preferred stock, par value $0.001 per share, in one or more series. Our board of directors will determine the dividend, voting, conversion and other rights of the series of shares of preferred stock being offered.

Debt Securities

We may offer general obligations, which may be secured or unsecured, senior or subordinated and convertible into shares of our common stock or preferred stock. In this prospectus, we refer to the senior debt securities and the subordinated debt securities together as the "debt securities." The senior debt securities will have the same rank as all of our other indebtedness that is not subordinated. The subordinated debt securities will be entitled to payment only after payment on our senior debt. In addition, the subordinated debt securities will be effectively subordinated to creditors. Our board of directors will determine the terms of each series of debt securities being offered.

We will issue the debt securities under an indenture or indentures between us and a trustee. In this document, we have summarized general features of the debt securities from the indentures. We encourage you to read the indentures, which are exhibits to the registration statement of which this prospectus is a part.

Warrants

We may offer warrants for the purchase of debt securities, shares of preferred stock or shares of common stock. Our board of directors will determine the terms of the warrants.

* * *

OncoGenex was incorporated in the state of California in October 1991 and subsequently reorganized as a Delaware corporation in September 1995. Our principal executive offices are located at 1522 217th Place SE, Suite 100, Bothell, Washington 98021; the telephone number is (425) 686-1500.

RISK FACTORS

An investment in our securities involves a high degree of risk. The prospectus supplement applicable to each offering of securities will contain a discussion of the risks applicable to an investment in our securities. Prior to making a decision about investing in our securities, you should carefully consider the specific factors discussed under the heading "Risk Factors" in the applicable prospectus supplement, together with all of the other information contained or incorporated by reference in the prospectus supplement or appearing or incorporated by reference in this prospectus. You should also consider the risks, uncertainties and assumptions discussed under Part II, Item 1A, "Risk Factors," in our Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2011, which is incorporated herein by reference, and may be amended, supplemented, or superseded from time to time by other reports we file with the SEC in the future. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended, and are required to file annual, quarterly, and other reports, proxy statements, and other information with the SEC. You may inspect and copy these reports, proxy statements, and other information at the public reference facilities maintained by the SEC in Washington, D.C., 100 F Street N.E., Washington, D.C. 20549. Copies of such materials can be obtained from the SEC's public reference section at prescribed rates. You may obtain information on the operation of the public reference rooms by calling the SEC at (800) SEC-0330. Additionally, the SEC maintains an Internet site (http://www.sec.gov) that contains reports, proxy and information statements, and various other of our information. You may also inspect the documents described herein at our principal executive offices, 1522 217th Place SE, Suite 100, Bothell, Washington 98021, during normal business hours.

In addition, we are a reporting issuer in British Columbia, Canada. You are invited to read and copy any reports, statements, or other information that we file with the British Columbia Securities Commission, which are electronically available from the Canadian System for Electronic Document Analysis and Retrieval at http://www.sedar.com, which is commonly known by the acronym "SEDAR," the Canadian equivalent of the SEC's EDGAR system.

Information about us is also available at our website at http://www.oncogenex.com. However, the information on our website is not a part of this prospectus and is not incorporated by reference into this prospectus.

INCORPORATION OF INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information that we file with the SEC, which means that we can disclose important information to you by referring you to those other documents. The information incorporated by reference is an important part of this prospectus, and information we file later with the SEC will automatically update and supercede this information. We incorporate by reference the documents listed below and any future filings we make with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of any offering of securities made by this prospectus:

- Our Annual Report on Form 10-K for the year ended December 31, 2010, including certain information incorporated by reference therein from our Definitive Proxy Statement for our 2011 annual meeting of stockholders;
- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2011, June 30, 2011, and September 30, 2011;
- Our current reports on Form 8-K filed on January 5, 2011 and June 2, 2011 (as amended on August 5, 2011) (excluding any information furnished in such reports under Item 2.02 and 7.01);
- The description of our common stock contained in our registration statement on Form 8-A filed with the Commission on September 27, 1995 under Section 12 of the Exchange Act, including any amendment or report filed for the purpose of updating such description;
- The description of our preferred stock purchase rights contained in our registration statement on Form 8-A filed with the Commission on July 25, 2002 under Section 12 of the Exchange Act, including any amendment or report filed for the purpose of updating such description; and
- Filings we make with the SEC pursuant to the Exchange Act after the date of the initial registration statement, of which this prospectus is a part, and prior to the effectiveness of the registration statement.

Upon written or oral request, we will provide without charge to each person, including any beneficial owner, to whom this prospectus is delivered, a copy of any or all of such documents that are incorporated herein by reference (other than exhibits to such documents unless such exhibits are specifically incorporated by reference into the documents that this prospectus incorporates). Written or oral requests for copies should be directed to OncoGenex Pharmaceuticals, Inc., Attn: Cameron Lawrence, 1522 217th Place SE, Suite 100, Bothell, Washington 98021, telephone number (425) 686-1500. See the section of this prospectus entitled "Where You Can Find More Information" for information concerning how to read and obtain copies of materials that we file with the SEC at the SEC's public offices.

Any statement contained in this prospectus, or in a document all or a portion of which is incorporated by reference, shall be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, any prospectus supplement or any document incorporated by reference modifies or supersedes such statement. Any such statement so modified or superseded shall not, except as so modified or superseded, constitute a part of this prospectus.

FORWARD-LOOKING STATEMENTS

This prospectus and documents incorporated herein by reference contain "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements involve a number of risks and uncertainties. We caution readers that any forward-looking statement is not a guarantee of future performance and that actual results could differ materially from those contained in the forward-looking statement. These statements are based on current expectations of future events. Such statements include, but are not limited to, statements about future financial and operating results, plans, objectives, expectations and intentions, costs and expenses, interest rates, outcome of contingencies, financial condition, results of operations, liquidity, business strategies, cost savings, objectives of management and other statements that are not historical facts. You can find many of these statements by looking for words like "believes," "expects," "anticipates," "estimates," "may," "should," "will," "could," "plan," "intend," or similar expressions in this document or in documents incorporated by reference into this document . We intend that such forward-looking statements be subject to the safe harbors created thereby. Examples of these forward-looking statements include, but are not limited to:

- progress and preliminary and future results of clinical trials conducted by us or our collaborators;
- anticipated regulatory filings, requirements, and future clinical trials conducted by us or our collaborators;
- timing and amount of future contractual payments, product revenue, and operating expenses;
- market acceptance of our products and the estimated potential size of these markets; and
- our anticipated future capital requirements and the terms of any capital financing agreements.

These forward-looking statements are based on the current beliefs and expectations of our management and are subject to significant risks and uncertainties. If underlying assumptions prove inaccurate or unknown risks or uncertainties materialize, actual results may differ materially from current expectations and projections. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this prospectus or, in the case of documents referred to or incorporated by reference, the date of those documents.

All subsequent written or oral forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. We do not undertake any obligation to release publicly any revisions to these forward-looking statements to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events, except as may be required under applicable U.S. securities law. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward-looking statements.

RATIO OF EARNINGS TO FIXED CHARGES

The following table shows our ratio of earnings to fixed charges for the periods indicated.

	Year Ended December 31,					Nine Months Ended September 30,
	2006	2007	2008	2009	2010	2011
Ratio of earnings to fixed charges(1)	—	—	—	—	—	—
Deficiency of earnings to fixed charges(2)	(10,919)	(7,823)	(10,691)	(2,465)	(15,584)	(5,104)

(1) In each of the periods presented, no earnings were sufficient to cover fixed charges.
(2) The deficiency of earnings is equivalent to net income (loss) before tax benefit (provision) and extraordinary gain.

USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds to us from the sale of our securities under this prospectus. Unless otherwise provided in the applicable prospectus supplement, we intend to use the net proceeds from the sale of securities under this prospectus for general corporate purposes, which may include funding research and development, increasing our working capital, reducing indebtedness, acquisitions or investments in businesses, products, or technologies that are complementary to our own, and capital expenditures. We will set forth in the prospectus supplement our intended use for the net proceeds received from the sale of any securities. Pending the application of the net proceeds, we intend to invest the net proceeds in short-term, investment-grade, interest-bearing securities.

PLAN OF DISTRIBUTION

We may sell the securities covered by this prospectus to one or more underwriters for public offering and sale by them, and may also sell the securities to investors directly or through agents. We will name any underwriter or agent involved in the offer and sale of securities in the applicable prospectus supplement. We have reserved the right to sell or exchange securities directly to investors on our own behalf in jurisdictions where we are authorized to do so. We may distribute the securities from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

We may solicit directly offers to purchase the securities being offered by this prospectus. We may also designate agents to solicit offers to purchase the securities from time to time. We will name in a prospectus supplement any agent involved in the offer or sale of our securities. Unless otherwise indicated in a prospectus supplement, an agent will be acting on a best efforts basis, and a dealer will purchase securities as a principal for resale at varying prices to be determined by the dealer.

If we utilize an underwriter in the sale of the securities being offered by this prospectus, we will execute an underwriting agreement with the underwriter at the time of sale and we will provide the name of any underwriter in the prospectus supplement that the underwriter will use to make resales of the securities to the public. In connection with the sale of the securities, we, or the purchasers of securities for whom the underwriter may act as

agent, may compensate the underwriter in the form of underwriting discounts or commissions. The underwriter may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions, or commissions from the underwriters or commissions from the purchasers for whom they may act as agent.

We will provide in the applicable prospectus supplement any compensation we pay to underwriters, dealers, or agents in connection with the offering of the securities, and any discounts, concessions, or commissions allowed by underwriters to participating dealers. Underwriters, dealers, and agents participating in the distribution of the securities may be deemed to be underwriters within the meaning of the Securities Act, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions. We may enter into agreements to indemnify underwriters, dealers, and agents against civil liabilities, including liabilities under the Securities Act, and to reimburse them for certain expenses. We may grant underwriters who participate in the distribution of our securities under this prospectus an option to purchase additional securities to cover any over-allotments in connection with the distribution.

The securities we offer under this prospectus may or may not be listed on a national securities exchange. To facilitate the offering of securities, certain persons participating in the offering may engage in transactions that stabilize, maintain, or otherwise affect the price of the securities. This may include over-allotments or short sales of the securities, which involves the sale by persons participating in the offering of more securities than we sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option. In addition, these persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if securities sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

We may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of stock, and they may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in these sale transactions will be an underwriter and will be identified in the applicable prospectus supplement or in a post-effective amendment to the registration statement relating to this prospectus. In addition, we may otherwise loan or pledge securities to a financial institution or other third party that in turn may sell the securities short using this prospectus. The financial institution or other third party may transfer its economic short position to investors in our securities or in connection with a concurrent offering of other securities.

We will file a prospectus supplement to describe the terms of any offering of our securities covered by this prospectus. The prospectus supplement will disclose:

- the terms of the offer;
- the names of any underwriters, including any managing underwriters, as well as any dealers or agents;
- the purchase price of the securities from us;
- the net proceeds to us from the sale of the securities;
- any delayed delivery arrangements;

- any underwriting discounts, commissions or other items constituting underwriters' compensation, and any commissions paid to agents;
- any initial public offering price; and
- other facts material to the transaction.

We will bear substantially all of the costs, expenses, and fees in connection with the registration of our securities under this prospectus. The underwriters, dealers, and agents may engage in transactions with us, or perform services for us, in the ordinary course of business.

In compliance with guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and any applicable prospectus supplement.

DESCRIPTION OF CAPITAL STOCK

General

As of the date of this prospectus, our authorized capital stock consists of 30,000,000 shares. Those shares consist of 25,000,000 shares of common stock, par value of $0.001 per share, and 5,000,000 shares of preferred stock, par value of $0.001 per share. As of September 30, 2011, there were approximately 9,748,352 shares of common stock issued and outstanding. In addition, as of September 30, 2011 we have reserved, pursuant to various plans, 1,567,974 shares of our common stock for issuance upon exercise of stock options by our employees, directors, officers and consultants, of which 762,441 are reserved for options currently outstanding, and 805,533 are available for future option grants, and, as of September 30, 2011, there were exercisable warrants outstanding to purchase 1,587,301 shares of our common stock at an exercise price of $20.00 per share, which expire in October 2015. Our common stock is traded on The NASDAQ Capital Market under the symbol “OGXI”.

The following description summarizes the material terms of our capital stock. This summary is, however, subject to the provisions of our certificate of incorporation and bylaws. For greater detail about our capital stock, please refer to our certificate of incorporation and bylaws.

Common Stock

Each holder of common stock is entitled to one vote for each share held on all matters to be voted upon by the stockholders, except that all holders are entitled to cumulate their votes in the election of directors. Every stockholder voting in the election of directors may cumulate his or her votes and may cast all such votes for a single director or may distribute them among the number to be voted for, or for any two or more of them as the stockholder may see fit. At any meeting of the stockholders, a quorum as to any matter shall consist of a majority of the votes entitled to be cast on the matter, except where a larger quorum is required by law, by our certificate of incorporation, or by our bylaws.

Holders of our common stock are entitled to receive dividends declared by our board of directors out of funds legally available for the payment of dividends, subject to the rights, if any, of preferred stockholders. In the event of our liquidation, dissolution, or winding up, holders of common stock are entitled to share ratably in all of our assets remaining after we pay our liabilities and distribute the liquidation preference of any then outstanding preferred stock. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of holders of any series of preferred stock that we may designate and issue in the future. Holders of common stock have no preemptive or other subscription or conversion rights. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of our common stock are fully paid and nonassessable, and any shares of our common stock to be issued upon an offering pursuant to this prospectus and the related prospectus supplement will be fully paid and nonassessable upon issuance.

The transfer agent and registrar for our common stock is Computershare Investor Services, Inc.

See “Certain Provisions of Delaware Law, the Company’s Certificate of Incorporation and Bylaws, and the Company’s Stockholder Rights Plan” for a description of provisions of our certificate of incorporation and bylaws which may have the effect of delaying, deferring or preventing changes in control of the Company.

Preferred Stock

The following description of preferred stock and the description of the terms of any particular series of preferred stock that we choose to issue hereunder and that will be set forth in the related prospectus supplement are not complete. These descriptions are qualified in their entirety by reference to the certificate of designation relating to that series. The rights, preferences, privileges, and restrictions of the preferred stock of each series will be fixed by the certificate of designation relating to that series.

The board of directors has the authority, without stockholder approval, subject to limitations prescribed by law, to provide for the issuance of the shares of preferred stock in one or more series, and by filing a certificate pursuant to the applicable law of the State of Delaware, to establish from time to time the number of shares to be included in each such series, and to fix the designation, powers, preferences, and rights of the shares of each series and the qualifications, limitations, or restrictions, including, but not limited to, the following:

- the number of shares constituting that series;
- dividend rights and rates;
- voting rights;
- conversion terms;
- rights and terms of redemption (including sinking fund provisions); and
- rights of the series in the event of liquidation, dissolution, or winding up.

All shares of preferred stock offered hereby will, when issued, be fully paid and nonassessable and will not have any preemptive or similar rights. Our board of directors could authorize the issuance of shares of preferred stock with terms and conditions that could have the effect of discouraging a takeover or other transaction that might involve a premium price for holders of the shares or which holders might believe to be in their best interests.

We will set forth in a prospectus supplement relating to the series of preferred stock being offered the following items:

- the title and stated value of the preferred stock;
- the number of shares of the preferred stock offered, the liquidation preference per share, and the offering price of the preferred stock;
- the dividend rate(s), period(s), and/or payment date(s) or method(s) of calculation applicable to the preferred stock;
- whether dividends are cumulative or non-cumulative and, if cumulative, the date from which dividends on the preferred stock will accumulate;
- the procedures for any auction and remarketing, if any, for the preferred stock;
- the provisions for a sinking fund, if any, for the preferred stock;
- the provision for redemption, if applicable, of the preferred stock;
- any listing of the preferred stock on any securities exchange;
- the terms and conditions, if applicable, upon which the preferred stock will be convertible into common stock, including the conversion price (or manner of calculation) and conversion period;
- voting rights, if any, of the preferred stock;
- a discussion of any material and/or special United States federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights upon the liquidation, dissolution, or winding up of our affairs;
- any limitations on issuance of any class or series of preferred stock ranking senior to or on a parity with the class or series of preferred stock as to dividend rights and rights upon liquidation, dissolution, or winding up of our affairs; and
- any other specific terms, preferences, rights, limitations, or restrictions of the preferred stock.

The transfer agent and registrar for any series of preferred stock will be set forth in the applicable prospectus supplement.

DESCRIPTION OF DEBT SECURITIES

The following description of the terms of the debt securities summarizes some general terms that will apply to the debt securities. The description is not complete, and we refer you to the indentures which we filed with the SEC as exhibits to the registration statement of which this prospectus is a part.

General

The debt securities will be either our senior debt securities or our subordinated debt securities. We will issue our debt securities under one or more separate indentures between us and a trustee. Senior debt securities will be issued under a senior indenture and subordinated securities will be issued under a subordinated indenture. A copy of the form of each type of indenture has been filed as an exhibit to the registration statement of which this prospectus is a part. The indentures may be supplemented by one or more supplemental indentures. We refer to the senior indenture and the subordinated indenture, together with any supplemental indentures, as the "indentures" throughout the remainder of this prospectus.

The indentures do not limit the amount of debt securities that we may issue. The indentures provide that debt securities may be issued up to the principal amount that we authorize from time to time. The senior debt securities will be secured or unsecured and will have the same rank as all of our other indebtedness that is not subordinated. The subordinated debt securities will be secured or unsecured and will be subordinated and junior to all senior indebtedness. The terms of the indentures do not contain any covenants or other provisions designed to give holders of any debt securities protection against changes in our operations, financial condition or transactions involving us, but those provisions may be included in the documents that include the specific terms of the debt securities.

We may issue the debt securities in one or more separate series of senior debt securities and subordinated debt securities. The prospectus supplement relating to the particular series of debt securities being offered will specify the particular amounts, prices and terms of those debt securities. These terms may include:

- the title of the debt securities;
- any limit upon the aggregate principal amount of the debt securities;
- if other than United States dollars, the currency or currencies, including the euro and other composite currencies, in which payments on the debt securities will be payable and whether the holder may elect payment to be made in a different currency;
- the date or dates when payments on the principal must be made or the method of determining that date or dates;
- interest rates, and the dates from which interest, if any, will accrue, and the dates when interest is payable and the maturity;
- the right, if any, to extend the interest payment periods and the duration of the extensions;
- the places where payments may be made and the manner of payments;
- any mandatory or optional redemption provisions;
- any subordination provisions;
- the denominations in which debt securities will be issued;
- the terms applicable to any debt securities issued at a discount from their stated principal amount;
- the currency or currencies of payment of principal or interest; and the period, if any, during which a holder may elect to pay in a currency other than the currency in which the debt securities are denominated;

- if the amount of payments of principal or interest is to be determined by reference to an index or formula, or based on a coin or currency other than that in which the debt securities are stated to be payable, the manner in which these amounts are determined and the calculation agent, if any;
- whether the debt securities will be secured or unsecured;
- whether the debt securities will be issued in the form of one or more global securities in temporary or definitive form;
- whether and on what terms we will pay additional amounts to holders of the debt securities that are not United States persons in respect of any tax, assessment or governmental charge withheld or deducted and, if so, whether and on what terms we will have the option to redeem the debt securities rather than pay the additional amounts;
- the certificates or forms required for the issuance of debt securities in definitive form;
- the trustees, depositaries, authenticating or paying agents, transfer agents or registrars of the debt securities;
- any deletions of, or changes or additions to, the events of default or covenants;
- conversion or exchange provisions, if any, including conversion or exchange prices or rates and adjustments to those prices and rates; and
- any other specific terms of the debt securities.

If any debt securities are sold for any foreign currency or currency unit or if any payments on the debt securities are payable in any foreign currency or currency unit, the prospectus supplement will contain any restrictions, elections, tax consequences, specific terms and other information with respect to the debt securities and the foreign currency or currency unit.

Some of the debt securities may be issued as original issue discount debt securities. Original issue discount securities may bear no interest or bear interest at below-market rates and will be sold at a discount below their stated principal amount and may bear no or below market interest. The applicable prospectus supplement will also contain any special tax, accounting or other information relating to original issue discount securities other kinds of debt securities that may be offered, including debt securities linked to an index or payable in currencies other than United States dollars.

Senior Debt Securities

Payment of the principal of, premium, if any, and interest on senior debt securities will rank on a parity with all of our other indebtedness that is not subordinated.

Subordinated Debt Securities

Payment of the principal of, premium, if any, and interest on subordinated debt securities will be junior in right of payment to the prior payment in full of all of our unsubordinated debt, including senior debt securities. We will state in the applicable prospectus supplement relating to any subordinated debt securities the subordination terms of the securities as well as the aggregate amount of outstanding debt, as of the most recent practicable date, that by its terms would be senior to the subordinated debt securities. We will also state in such prospectus supplement limitations, if any, on issuance of additional senior debt.

Registrar and Paying Agent

The debt securities may be presented for registration of transfer or for exchange at the corporate trust office of the security registrar or at any other office or agency that we maintain for those purposes. In addition, the debt securities may be presented for payment of principal, interest and any premium at the office of the paying agent or at any office or agency that we maintain for those purposes.

Global Securities

We may issue the debt securities of a series in whole or in part in the form of one or more global certificates that will be deposited with a depositary we will identify in a prospectus supplement. We may issue global debt securities in either temporary or definitive form. We will describe the specific terms of the depositary arrangement with respect to any series of debt securities in the prospectus supplement.

Conversion or Exchange Rights

Debt securities may be convertible into or exchangeable for shares of our common stock. The terms and conditions of conversion or exchange will be stated in the applicable prospectus supplement. The terms will include, among others, the following:

- the conversion or exchange price;
- the conversion or exchange period;
- provisions regarding the convertibility or exchangeability of the debt securities, including who may convert or exchange;
- events requiring adjustment to the conversion or exchange price;
- provisions affecting conversion or exchange in the event of our redemption of the debt securities; and
- any anti-dilution provisions, if applicable.

Registered Global Securities

Unless and until it is exchanged in whole or in part for debt securities in definitive registered form, a registered global security may not be transferred except as a whole:

- by the depositary for that registered global security to its nominee;
- by a nominee of the depositary to the depositary or another nominee of the depositary; or
- by the depositary or its nominee to a successor of the depositary or a nominee of the successor.

The prospectus supplement relating to a series of debt securities will describe the specific terms of the depositary arrangement involving any portion of the series represented by a registered global security.

We anticipate that the following provisions will apply to all depositary arrangements for debt securities:

- ownership of beneficial interests in a registered global security will be limited to persons that have accounts with the depositary for that registered global security, these persons being referred to as “participants”, or persons that may hold interests through participants;
- upon the issuance of a registered global security, the depositary for the registered global security will credit, on its book-entry registration and transfer system, the participants’ accounts with the respective principal amounts of the debt securities represented by the registered global security beneficially owned by the participants;
- any dealers, underwriters or agents participating in the distribution of the debt securities will designate the accounts to be credited; and
- ownership of beneficial interest in that registered global security will be shown on, and the transfer of that ownership interest will be effected only through, records maintained by the depositary for that registered global security for interests of participants and on the records of participants for interests of persons holding through participants.

The laws of some states may require that specified purchasers of securities take physical delivery of the securities in definitive form. These laws may limit the ability of those persons to own, transfer or pledge beneficial interests in registered global securities.

So long as the depositary for a registered global security, or its nominee, is the registered owner of that registered global security, the depositary or that nominee will be considered the sole owner or holder of the debt securities represented by the registered global security for all purposes under the indenture. Except as stated below, owners of beneficial interests in a registered global security:

- will not be entitled to have the debt securities represented by a registered global security registered in their names;
- will not receive or be entitled to receive physical delivery of the debt securities in definitive form; and
- will not be considered the owners or holders of the debt securities under the indenture.

Accordingly, each person owning a beneficial interest in a registered global security must rely on the procedures of the depositary for the registered global security and, if the person is not a participant, on the procedures of a participant through which the person owns its interest, to exercise any rights of a holder under the indenture.

We understand that under existing industry practices, if we request any action of holders or if an owner of a beneficial interest in a registered global security desires to give or take any action that a holder is entitled to give or take under the indenture, the depositary for the registered global security would authorize the participants holding the relevant beneficial interests to give or take the action, and the participants would authorize beneficial owners owning through the participants to give or take the action or would otherwise act upon the instructions of beneficial owners holding through them.

We will make payments of principal and premium, if any, and interest, if any, on debt securities represented by a registered global security registered in the name of a depositary or its nominee to the depositary or its nominee as the registered owners of the registered global security. None of us, the trustee or any other of our agents or agents of the trustee will be responsible or liable for any aspect of the records relating to, or payments made on account of, beneficial ownership interests in the registered global security or for maintaining, supervising or reviewing any records relating to the beneficial ownership interests.

We expect that the depositary for any debt securities represented by a registered global security, upon receipt of any payments of principal and premium, if any, and interest, if any, in respect of the registered global security, will immediately credit participants' accounts with payments in amounts proportionate to their respective beneficial interests in the registered global security as shown on the records of the depositary. We also expect that standing customer instructions and customary practices will govern payments by participants to owners of beneficial interests in the registered global security held through the participants, as is now the case with the securities held for the accounts of customers in bearer form or registered in "street name." We also expect that any of these payments will be the responsibility of the participants.

If the depositary for any debt securities represented by a registered global security is at any time unwilling or unable to continue as depositary or stops being a clearing agency registered under the Exchange Act, we will appoint an eligible successor depositary. If we fail to appoint an eligible successor depositary within 90 days, we will issue the debt securities in definitive form in exchange for the registered global security. In addition, we may at any time and in our sole discretion decide not to have any of the debt securities of a series represented by one or more registered global securities. In that event, we will issue debt securities of the series in a definitive form in exchange for all of the registered global securities representing the debt securities. The trustee will register any debt securities issued in definitive form in exchange for a registered global security in the name or names as the depositary, based upon instructions from its participants, will instruct the trustee.

Merger, Consolidation or Sale of Assets

Under the terms of the indentures, we may consolidate or merge with another company, or sell, lease or convey all or substantially all our assets to another company, if:

- OncoGenex is the continuing entity; or
- (i) OncoGenex is not the continuing entity, (ii) the successor entity is organized under the laws of the United States of America and expressly assumes all payments on all of the debt securities and the performance and observance of all the covenants and conditions of the applicable indenture, and (iii) the merger, sale of assets or other transaction must not cause a default on the debt securities and we must not already be in default.

Events of Default

Unless otherwise provided for in the prospectus supplement, the term "event of default," when used in the indentures means any of the following:

- failure to pay interest for 30 days after the date payment is due and payable; however, if we extend an interest payment period under the terms of the debt securities, the extension will not be a failure to pay interest;
- failure to pay principal or premium, if any, on any debt security when due, either at maturity, upon any redemption, by declaration or otherwise;
- failure to perform other covenants for 60 days after notice that performance was required;
- certain events in bankruptcy, insolvency or reorganization of our company; or
- any other event of default provided in the applicable resolution of our board of directors or the supplemental indenture under which we issue a series of debt securities.

An event of default for a particular series of debt securities does not necessarily constitute an event of default for any other series of debt securities issued under an indenture. If an event of default relating to the payment of interest, principal or any sinking fund installment involving any series of debt securities has occurred and is continuing, the trustee or the holders of not less than 25% in aggregate principal amount of the debt securities of each affected series may declare the entire principal of all the debt securities of that series to be due and payable immediately.

If an event of default relating to the performance of other covenants occurs and is continuing for a period of 60 days after notice of that event of default, or if any other event of default occurs and is continuing involving all of the series of senior debt securities, then the trustee or the holders of not less than 25% in aggregate principal amount of all of the series of senior debt securities may declare the entire principal amount of all of the series of senior debt securities due and payable immediately.

Similarly, if an event of default relating to the performance of other covenants occurs and is continuing for a period of 60 days after notice, or if any other event of default occurs and is continuing involving all of the series of subordinated debt securities, then the trustee or the holders of not less than 25% in aggregate principal amount of all of the series of subordinated debt securities may declare the entire principal amount of all of the series of subordinated debt securities due and payable immediately.

If, however, the event of default relating to the performance of other covenants or any other event of default that has occurred and is continuing is for less than all of the series of senior debt securities or subordinated debt securities, then, the trustee or the holders of not less than 25% in aggregate principal amount of each affected series of the senior debt securities or the subordinated debt securities, as the case may be, may declare the entire principal amount of all debt securities of that affected series due and payable immediately. The holders of not

less than a majority, or any applicable supermajority, in aggregate principal amount of the debt securities of a series may, after satisfying conditions, rescind and annul any of the above-described declarations and consequences involving the series.

If an event of default relating to events in bankruptcy, insolvency or reorganization occurs and is continuing, then the principal amount of all of the debt securities outstanding, and any accrued interest, will automatically become due and payable immediately, without any declaration or other act by the trustee or any holder.

Each indenture imposes limitations on suits brought by holders of debt securities against us. Except for actions for payment of overdue principal or interest, no holder of debt securities of any series may institute any action against us under each indenture unless:

- the holder has previously given to the trustee written notice of default and continuance of that default;
- the holders of at least 25% in principal amount of the outstanding debt securities of the affected series have requested that the trustee institute the action;
- the requesting holders have offered the trustee reasonable indemnity for expenses and liabilities that may be incurred by bringing the action;
- the trustee has not instituted the action within 60 days of the request; and
- the trustee has not received inconsistent direction by the holders of a majority in principal amount of the outstanding debt securities of the series.

We will be required to file annually with the trustee a certificate, signed by an officer of our company, stating whether or not the officer knows of any default by us in the performance, observance or fulfillment of any condition or covenant of an indenture.

Discharge, Defeasance and Covenant Defeasance

We can discharge or defease our obligations under the indentures as stated below or as provided in the prospectus supplement.

Unless otherwise provided in the applicable prospectus supplement, we may discharge obligations to holders of any series of debt securities that have not already been delivered to the trustee for cancellation and that have either become due and payable or are by their terms to become due and payable, or are scheduled for redemption, within one year. We may effect a discharge by irrevocably depositing with the trustee cash or United States government obligations, as trust funds, in an amount certified to be enough to pay when due, whether at maturity, upon redemption or otherwise, the principal of, premium, if any, and interest on the debt securities and any mandatory sinking fund payments.

Unless otherwise provided in the applicable prospectus supplement, we may also discharge any and all of our obligations to holders of any series of debt securities at any time, which we refer to as “defeasance.” We may also be released from the obligations imposed by any covenants of any outstanding series of debt securities and provisions of the indentures, and we may omit to comply with those covenants without creating an event of default under the trust declaration, which we refer to as “covenant defeasance.” We may effect defeasance and covenant defeasance only if, among other things:

- we irrevocably deposit with the trustee cash or United States government obligations, as trust funds, in an amount certified to be enough to pay at maturity, or upon redemption, the principal, premium, if any, and interest on all outstanding debt securities of the series;
- we deliver to the trustee an opinion of counsel from a nationally recognized law firm to the effect that (i) in the case of covenant defeasance, the holders of the series of debt securities will not recognize income, gain or loss for United States federal income tax purposes as a result of the defeasance, and will be subject to tax in the same manner and at the same times as if no covenant defeasance had

occurred and (ii) in the case of defeasance, either we have received from, or there has been published by, the Internal Revenue Service a ruling or there has been a change in applicable United States federal income tax law, and based on that ruling or change, the holders of the series of debt securities will not recognize income, gain or loss for United States federal income tax purposes as a result of the defeasance and will be subject to tax in the same manner as if no defeasance had occurred; and

- in the case of subordinated debt securities, no event or condition will exist that, based on the subordination provisions applicable to the series, would prevent us from making payments of principal of, premium, if any, and interest on any of the applicable subordinated debt securities at the date of the irrevocable deposit referred to above or at any time during the period ending on the 91st day after the deposit date.

Although we may discharge or decrease our obligations under the indentures as described in the two preceding paragraphs, we may not avoid, among other things, our duty to register the transfer or exchange of any series of debt securities, to replace any temporary, mutilated, destroyed, lost or stolen series of debt securities or to maintain an office or agency in respect of any series of debt securities.

Modification of the Indenture

Except as provided in the prospectus supplement, each indenture provides that we and the trustee may enter into supplemental indentures without the consent of the holders of debt securities to:

- secure any debt securities;
- evidence the assumption by a successor corporation of our obligations and the conversion of any debt securities into the capital stock of that successor corporation, if the terms of those debt securities so provide;
- add covenants for the protection of the holders of debt securities;
- cure any ambiguity or correct any inconsistency in the indenture;
- establish the forms or terms of debt securities of any series; and
- evidence and provide for the acceptance of appointment by a successor trustee.

Each indenture also provides that we and the trustee may, with the consent of the holders of not less than a majority in aggregate principal amount of debt securities of all series of senior debt securities or of subordinated debt securities then outstanding and affected, voting as one class, add any provisions to, or change in any manner, eliminate or modify in any way the provisions of, the indenture or modify in any manner the rights of the holders of the debt securities. We and the trustee may not, however, without the consent of the holder of each outstanding debt security affected:

- extend the stated maturity of any debt security;
- reduce the principal amount or premium, if any;
- reduce the rate or extend the time of payment of interest;
- reduce any amount payable on redemption;
- change the currency in which the principal, unless otherwise provided for a series, premium, if any, or interest is payable;
- reduce the amount of the principal of any debt security issued with an original issue discount that is payable upon acceleration or provable in bankruptcy;
- impair the right to institute suit for the enforcement of any payment on any debt security when due; or
- reduce the percentage of holders of debt securities of any series whose consent is required for any modification of the indenture for any such series.

Concerning the Trustee

Each indenture provides that there may be more than one trustee under the indenture, each for one or more series of debt securities. If there are different trustees for different series of debt securities, each trustee will be a trustee of a trust under the indentures separate and apart from the trust administered by any other trustee under the indenture. Except as otherwise indicated in this prospectus or any prospectus supplement, any action permitted to be taken by a trustee may be taken by that trustee only on the one or more series of debt securities for which it is the trustee under the indenture. Any trustee under the indentures may resign or be removed from one or more series of debt securities. All payments of principal of, premium, if any, and interest on, and all registration, transfer, exchange, authentication and delivery of, the debt securities of a series may be effected by the trustee for that series at an office or agency designated by the trustee of that series.

If the trustee becomes a creditor of our company, each indenture places limitations on the right of the trustee to obtain payment of claims or to realize on property received in respect of any such claim as security or otherwise. The trustee may engage in other transactions. If it acquires any conflicting interest relating to any duties concerning the debt securities, however, it must eliminate the conflict or resign as trustee.

The holders of a majority in aggregate principal amount of any series of debt securities then outstanding will have the right to direct the time, method and place of conducting any proceeding for exercising any remedy available to the trustee concerning the applicable series of debt securities, so long as the direction:

- would not conflict with any rule of law or with the applicable indenture;
- would not be unduly prejudicial to the rights of another holder of the debt securities; and
- would not involve any trustee in personal liability.

Each indenture provides that if an event of default occurs, is not cured and is known to any trustee, the trustee must use the same degree of care as a prudent person would use in the conduct of his or her own affairs in the exercise of the trust's power. The trustee will be under no obligation to exercise any of its rights or powers under the indenture at the request of any of the holders of the debt securities, unless they have offered to the trustee security and indemnity satisfactory to the trustee.

No Individual Liability of Incorporators, Stockholders, Officers or Directors

Each indenture provides that no incorporator and no past, present or future stockholder, officer or director of our company or any successor corporation in those capacities will have any individual liability for any of our obligations, covenants or agreements under the debt securities or such indenture.

Governing Law

The indentures and the debt securities will be governed by, and construed in accordance with, the laws of the State of New York.

DESCRIPTION OF WARRANTS

General

We may issue warrants for the purchase of our debt securities, preferred stock, or common stock, or any combination thereof. Warrants may be issued independently or together with our debt securities, preferred stock, or common stock and may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent. The warrant agent will act solely as our agent in connection with the warrants. The warrant agent will not have any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants. This summary of certain provisions of the warrants is not complete. For the terms of a particular series of warrants, you should refer to the prospectus supplement for that series of warrants and the warrant agreement for that particular series.

Debt warrants

The prospectus supplement relating to a particular issue of warrants to purchase debt securities will describe the terms of the debt warrants, including the following:

- the title of the debt warrants;
- the offering price for the debt warrants, if any;
- the aggregate number of the debt warrants;
- the designation and terms of the debt securities, including any conversion rights, purchasable upon exercise of the debt warrants;
- if applicable, the date from and after which the debt warrants and any debt securities issued with them will be separately transferable;
- the principal amount of debt securities that may be purchased upon exercise of a debt warrant and the exercise price for the warrants, which may be payable in cash, securities, or other property;
- the dates on which the right to exercise the debt warrants will commence and expire;
- if applicable, the minimum or maximum amount of the debt warrants that may be exercised at any one time;
- whether the debt warrants represented by the debt warrant certificates or debt securities that may be issued upon exercise of the debt warrants will be issued in registered or bearer form;
- information with respect to book-entry procedures, if any; the currency or currency units in which the offering price, if any, and the exercise price are payable;
- if applicable, a discussion of material U.S. federal income tax considerations;
- the antidilution provisions of the debt warrants, if any;
- the redemption or call provisions, if any, applicable to the debt warrants;
- any provisions with respect to the holder’s right to require us to repurchase the warrants upon a change in control or similar event; and
- any additional terms of the debt warrants, including procedures, and limitations relating to the exchange, exercise, and settlement of the debt warrants.

Debt warrant certificates will be exchangeable for new debt warrant certificates of different denominations. Debt warrants may be exercised at the corporate trust office of the warrant agent or any other office indicated in the prospectus supplement. Prior to the exercise of their debt warrants, holders of debt warrants will not have any of the rights of holders of the debt securities purchasable upon exercise and will not be entitled to payment of principal or any premium, if any, or interest on the debt securities purchasable upon exercise.

Equity warrants

The prospectus supplement relating to a particular series of warrants to purchase our common stock or preferred stock will describe the terms of the warrants, including the following:

- the title of the warrants;
- the offering price for the warrants, if any;
- the aggregate number of warrants;
- the designation and terms of the common stock or preferred stock that may be purchased upon exercise of the warrants;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each security;
- if applicable, the date from and after which the warrants and any securities issued with the warrants will be separately transferable;
- the number of shares of common stock or preferred stock that may be purchased upon exercise of a warrant and the exercise price for the warrants;
- the dates on which the right to exercise the warrants shall commence and expire;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- if applicable, a discussion of material U.S. federal income tax considerations;
- the antidilution provisions of the warrants, if any;
- the redemption or call provisions, if any, applicable to the warrants;
- any provisions with respect to holder's right to require us to repurchase the warrants upon a change in control or similar event; and
- any additional terms of the warrants, including procedures, and limitations relating to the exchange, exercise, and settlement of the warrants.

Holders of equity warrants will not be entitled:

- to vote, consent, or receive dividends;
- receive notice as stockholders with respect to any meeting of stockholders for the election of our directors or any other matter; or
- exercise any rights as stockholders of OncoGenex.

CERTAIN PROVISIONS OF DELAWARE LAW, THE COMPANY'S CERTIFICATE OF INCORPORATION AND BYLAWS, AND THE COMPANY'S STOCKHOLDER RIGHTS PLAN

The following paragraphs summarize certain provisions of the Delaware General Corporation Law, or the DGCL, and our certificate of incorporation and bylaws. The summary does not purport to be complete and is subject to and qualified in its entirety by reference to the DGCL and to our certificate of incorporation and bylaws, copies of which are on file with the SEC as exhibits to documents previously filed by us. See "Where You Can Find More Information."

Our certificate of incorporation limits the personal liability of our directors to OncoGenex and our stockholders to the fullest extent permitted by the DGCL. The inclusion of this provision in our certificate of incorporation may reduce the likelihood of derivative litigation against directors and may discourage or deter stockholders or management from bringing a lawsuit against directors for breach of their duty of care.

Our bylaws provide that special meetings of stockholders can be called only by the board of directors, the Chairman of the board of directors, or the President. Stockholders are not permitted to call a special meeting and cannot require the board of directors to call a special meeting.

We have a stockholder rights plan that may have the effect of discouraging unsolicited takeover proposals. Specifically, the rights issued thereunder could cause significant dilution to a person or group that attempts to acquire us on terms not approved in advance by our board of directors. In addition, our organizational documents contain provisions that may discourage unsolicited takeover proposals that stockholders may consider to be in their best interests. These provisions include the ability of our board of directors to designate the terms of and issue new series of preferred stock and the ability of our board of directors to amend the bylaws without stockholder approval.

We are subject to Section 203 of the DGCL, which prohibits a Delaware corporation from engaging in any "business combination" with an "interested stockholder," for a period of three years after the date of the transaction in which a person became an "interested stockholder," unless:

- prior to such date the board of directors of the corporation approved either the "business combination" or the transaction that resulted in the stockholder becoming an "interested stockholder;"
- upon consummation of the transaction which resulted in the stockholder becoming an "interested stockholder," the "interested stockholder" owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of voting shares outstanding (but not the voting shares owned by the "interested stockholder") those shares owned (1) by persons who are directors and also officers and (2) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- at or subsequent to such time the "business combination" is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of a least 66 2/3% of the outstanding voting stock that is not owned by the "interested stockholder."

A "business combination" includes mergers, stock or asset sales and other transactions resulting in a financial benefit to the "interested stockholders." An "interested stockholder" is a person who, together with affiliates and associates, owns (or within three years, did own) 15% or more of the corporation's voting stock. Although Section 203 permits us to elect not to be governed by its provisions, we have not made this election. As a result of the application of Section 203, potential acquirers of OncoGenex may be discouraged from attempting to effect an acquisition transaction with us, thereby possibly depriving holders of our securities of certain opportunities to sell or otherwise dispose of such securities at above-market prices pursuant to such transactions.

LEGAL MATTERS

Fenwick & West LLP, Seattle, Washington, will issue an opinion about certain legal matters with respect to the securities. Any underwriters or agents will be advised about legal matters relating to any offering by their own counsel.

EXPERTS

The consolidated financial statements of OncoGenex Pharmaceuticals, Inc. appearing in OncoGenex Pharmaceuticals, Inc.'s Annual Report (Form 10-K) for the year ended December 31, 2010, and the effectiveness of OncoGenex Pharmaceuticals, Inc.'s internal control over financial reporting as of December 31, 2010 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon included therein, and incorporated herein by reference. Such financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein in reliance upon the reports of Ernst & Young LLP pertaining to such financial statements and the effectiveness of our internal control over financial reporting as of the respective dates (to the extent covered by consents filed with the Securities and Exchange Commission) given on the authority of such firm as experts in accounting and auditing.

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4,165,000 Shares
Common Stock
$12.00 per share

Leerink Swann
Stifel Nicolaus Weisel
Lazard Capital Markets
William Blair & Company

PROSPECTUS SUPPLEMENT